
**Ontario
Energy
Board**



IN THE MATTER OF A REFERENCE FROM THE MINISTER
OF ENERGY RESPECTING ONTARIO HYDRO'S PROPOSED
ELECTRICITY RATES FOR 1991

**REVIEW OF ONTARIO HYDRO'S NET
INCOME POLICY**

H.R. 19-II

REPORT OF THE BOARD

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la Commission de l'énergie de l'Ontario.

2300, rue Yonge

26e étage

Toronto (Ontario)

M4P 1E4

Téléphone 416/481-1967

(La Commission accepte les appels à frais virés.)

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Commission
de l'Énergie
de l'Ontario

P.O. Box 2319
2300 Yonge Street
26th Floor
Toronto, Ontario
M4P 1E4
416/481-1967

C.P. 2319
2300, rue Yonge
26^e étage
Toronto (Ontario)
M4P 1E4
416/481-1967

January 31, 1991

The Honourable Jenny Carter
Minister of Energy
12th Floor,
56 Wellesley Street West
Toronto, Ontario
M7A 2B7

Dear Minister:

Re: Ontario Hydro H.R. 19 Report on Net Income Policy

The Board herewith submits its Report on Ontario Hydro's Net Income Policy which completes the hearing under Board File H.R. 19 resulting from a Minister's Letter of Reference dated March 27, 1990.

The Board previously submitted its Interim Report on Hydro's proposed 1991 rates on August 28, 1990.

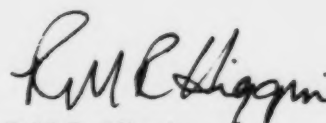
The Board in making its findings and recommendations, has placed greatest emphasis on maintaining Hydro's present excellent financial soundness through the 1990's. The hearing has also raised questions about the need to price power appropriately to ensure a level playing field for investment decisions by electricity consumers in respect of energy efficiency, fuel substitution and load displacement non-utility generation.

The Board has recommended that, although Hydro bondholders place primary reliance on the province's debt guarantee, Hydro and the government finalize a new net income policy based on direct pursuit of financial performance measures which are also important to the issuers and holders of Ontario Hydro's debt.

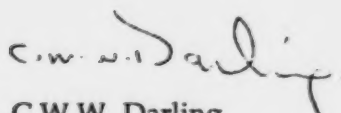
- 2 -

Other recommendations include giving further consideration to the economic efficiency aspects of net income and power at cost to ensure that the government's policy objectives for efficient energy use are properly reflected in Hydro's net income policy.

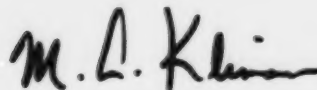
Respectfully Submitted,



R.M.R. Higgin
Presiding Member



C.W.W. Darling
Member



M.L. Kliman
Member



EXECUTIVE SUMMARY - H.R. 19-II
Review of Ontario Hydro's Net Income Policy

1. **Net Income**, in the context of Ontario Hydro's revenue requirement and rates, is an amount of money collected annually in rates from customers which is over and beyond the direct accounting cost of producing power. Net income provisions are currently set out in the Power Corporation Act and are partly mandatory and partly discretionary.
2. The Power Corporation Act specifies that Ontario Hydro's price payable for power include a "sinking fund" for the repayment of debt in forty years with interest at 4 percent per year. Differences between the net income actually earned and this statutory debt retirement amount are credited or debited to the account for rate stabilization and contingencies.
3. Since 1983, Ontario Hydro's policy for establishing its target net income has been based on achieving coverage of 1.05 times interest charged to operations and 1.50 times interest capitalized, and on a cash flow coverage ratio above 1.0. The net income requirement for the Corporate Budget, Financial Forecast, and rates is established considering the level of rate increase, financial soundness, and capital availability, and can differ from the target net income.
4. In its H.R. 18 Report, the Ontario Energy Board recommended a review of Ontario Hydro's net income policy because of concerns about Hydro's failure to achieve its target levels of net income in several years since 1984, and projections of somewhat weaker financial performance in the outlook period.

5. In H.R. 19, Ontario Hydro filed two studies on net income at the beginning of the main hearing. The Ontario Energy Board, after hearing submissions from parties to the hearing, decided to defer consideration of the net income studies until after August 31, 1990, in order to file its report on Ontario Hydro's 1991 revenue requirement and proposed rate increase by that date, as required by the Minister of Energy's Letter of Reference.
6. The Ontario Energy Board, having issued its Interim Report on 1991 rates, reconvened the H.R. 19 hearing on September 18, 1990, to hear evidence on Ontario Hydro's proposal to change its net income policy for the 1992 rate year. It also heard expert testimony on alternative proposals from parties to the hearing. The hearing was completed on November 17, 1990 with the receipt of final argument.
7. In its review of the complex issue of an appropriate net income policy for Ontario Hydro, and the mass of evidence and conflicting expert opinion, the Ontario Energy Board has concentrated on the government's requirement that Ontario Hydro be financially sound. To assist in the further consideration of the related issues of economic efficiency and the pricing of power, it has tried to summarize the often conflicting views on those topics.
8. All parties to the hearing agreed that Ontario Hydro is financially sound at present, as demonstrated by its recent \$1.25 billion global bond issue which was AAA rated and taken up rapidly. This excellent credit position is primarily the result of the province's guarantee of Ontario Hydro's debt, the ability of Ontario Hydro to increase rates to cover costs, and its past financial performance. However, all parties agreed that the current net income policy would not guarantee the maintenance of financial soundness in future, and that the consequences of not doing so could be serious for Hydro and for the province of Ontario.
9. Having studied several options for a new net income policy, all of which were consistent with the current provisions of the Power Corporation Act, Ontario Hydro proposed a new approach for net income policy. The target net income would be set at the statutory debt retirement level, plus 7.5 percent interest on the accumulated reserve for rate stabilization and contingencies at the beginning of the rate year. Hydro argued that this reserve-based policy would provide

levels of financial performance indicators adequate to maintain Ontario Hydro's top credit rating.

10. The parties to the hearing all rejected Hydro's proposed reserve-based net income policy and target formulation as lacking a proper foundation related to the maintenance of financial soundness. It was recognized, however, that the proposed policy is, in part, a reflection of the constraints imposed by the current provisions of section 75 of the Power Corporation Act.
11. The Municipal Electrical Association, Association of Major Power Consumers in Ontario and Ontario Energy Board Staff all argued that the most important objective of a new net income policy was the direct pursuit of financial soundness defined in terms of goals recognizable to the financial markets. There was no agreement, however, on which financial performance measures were most important or on the appropriate target levels of these. Ontario Energy Board Staff proposed that a market-based return on equity and the debt/equity ratio be the prime considerations. Other parties argued for interest coverage and the debt/equity ratio. This latter view also coincided with that of Ontario Hydro's own experts concerning the important measures by which financial markets judge Ontario Hydro's credit rating and debt capacity.
12. The Ontario Energy Board finds that direct pursuit of financial soundness is a more desirable basis for net income policy than Ontario Hydro's proposed reserve-based approach founded on the provisions of section 75 of the Power Corporation Act. The latter is viewed by the Ontario Energy Board as an anachronism in relation to meeting the needs of financial markets for measures of financial performance.
13. The Ontario Energy Board recommends against adoption of Hydro's proposed reserve-based net income policy and recommends that appropriate interest coverage levels and, to a lesser degree, the debt ratio become the basis of Hydro's net income policy for the 1990s. While not essential for the implementation of the recommended approach, the Power Corporation Act should be changed as soon as feasible to reflect this new policy direction.
14. The Ontario Energy Board recommends that the government and Hydro agree on the operating principles that will guide the implementation of the new policy

and embody these either in a regulation under the Power Corporation Act or in the existing Memorandum of Understanding.

15. The Ontario Energy Board recommends that the government provide direction to Ontario Hydro on including in rates, as part of net income, a charge for the cost of the Corporation's equity capital. However, it does not find that this charge should be equivalent to a market-based return on the equity contributed by Hydro's ratepayers. Determining the appropriate cost will require further review by the government and the Corporation. The objective of this review is to ensure that rational investment decisions by consumers about energy efficiency, fuel substitution and load displacement non-utility generation initiatives are made on a "level playing field" with electricity purchase decisions.

The Ontario Energy Board's Report

This Report is structured to reflect the evidence, the testimony of expert witnesses, the arguments submitted by the parties, as well as the Ontario Energy Board's Findings and Conclusions. It will become apparent to the reader that there is overlap between the evidence, testimony and argument submitted by parties to the hearing.

Chapter 1 introduces the principle of power at cost and the net income provisions of the Power Corporation Act.

Chapter 2 summarizes the evidence, testimony and positions of the parties with respect to Hydro's current and proposed net income policies.

Chapter 3 summarizes the evidence, testimony and positions of the parties on alternatives to Hydro's proposed net income policy.

Chapter 4 provides a summary of the key points of the preceding chapters which are relevant to the Board's deliberations and sets out the Ontario Energy Board's conclusions and recommendations. (page 101)

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PREFACE

PHASE II OF THE HEARING UNDER BOARD FILE H.R. 19

In a letter dated March 26, 1990 to the Minister of Energy ("the Minister"), the President and Chairman of Ontario Hydro ("Hydro", or "the Corporation") advised that the Corporation proposed to increase its bulk or wholesale power rates effective January 1, 1991.

The Minister, in accordance with the provisions of section 37 of the Ontario Energy Board Act ("the Act") by letter dated March 27, 1990, ("the Reference") referred the proposed rate increase for review by the Ontario Energy Board ("the Board", "the OEB") in a public hearing.

The Board assigned the Reference hearing file number H.R. 19, and issued several Notices and Procedural Orders to inform interested parties and the public about the hearing and how to intervene, and to establish the dates for the filing of evidence and for the submission of, and response to, written interrogatories.

On May 23, 1990 Hydro filed an external consultant's report and an internal report, both entitled "Review of Net Income Policy" ("the Reports"). On June 4, 1990 the Board heard a motion by Counsel to Board Staff requesting that the Reports not be received in evidence, or considered in the hearing of evidence in H.R. 19, and that consideration of the Reports be deferred until the Board's review of Hydro's rate proposal for 1992.

In its Decision with Reasons dated June 5, 1990, the Board stated that the issue of net income policy needed to be reviewed as part of the H.R. 19 proceeding, and ruled that the Reports would become part of the record in

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H.R. 19. The Board found, however, that the Reports were filed too late to permit a thorough examination of the issue before August 31, 1990, by which time the Board was required to file its report on 1991 rates. It was noted that Hydro's 1991 rate proposal did not contain a level of net income based on the recommendations in the Reports.

In accordance with section 37(7) of the Act, the Board deferred consideration of the Reports and set September 18, 1990 as the date for Phase II of H.R. 19 to consider the issue of the appropriateness of Hydro's proposed net income policy.

The Board submitted its Interim Report on Hydro's 1991 rate proposal to the Minister on August 28, 1990.

The Board heard the Phase II evidence of Hydro, the Municipal Electrical Association ("MEA") and Board Staff on September 18, 19 and 25, 1990. In response to requests from Hydro and the Association of Major Power Consumers in Ontario ("AMPCO") to file reply evidence to Board Staff's evidence, the Board set November 1, 1990 as the date for the hearing of reply evidence.

The evidentiary portion of the Phase II hearing was completed on November 2, 1990. Argument was received by November 17, 1990.

APPEARANCES

Board Staff	Stephen Goudge, Q.C.
Ontario Hydro	Bruce Campbell, Q.C.
Association of Major Power Consumers in Ontario	Ronald Foerster Jeffrey Davies
Municipal Electric Association	Allan Mark Brian Smith

REPORT OF THE BOARD

Ontario Association of
Physical Plant Administrators

Henry Arndt

Arnold Earl

For Himself

WITNESSES

Ontario Hydro

R. H. Muller

Managing Director,
Securities Research Department,
J. P. Morgan Securities Inc..

E. H. Burdette

Senior Vice-President,
Finance and Services,
Ontario Hydro.

F. G. Long

Manager, Forecasts -
Long Term Department,
Corporate Financial Planning
& Reporting Division, Finance Branch,
Ontario Hydro.

R.C. Lind

Professor of Economics, Management and
Public Policy,
Johnson Graduate School of Management,
Cornell University.

MEA

M. D. Luftig

Vice-President,
National Economic Research
Associates, Inc.

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Board Staff

V. L. Andrews	Professor of Banking and Finance, Chairman, Department of Finance, College of Business Administration, Georgia State University.
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AMPCO

K.L. MacDonald	Senior Executive Vice-President Paper Group, Abitibi Price Inc.
W.R.O. Aitken	Executive Vice-President, Inco Limited.
I.M. Young	Senior Vice-President and Chief Financial Officer, ICI Canada Inc.

1. INTRODUCTION AND BACKGROUND

Net Income in its commonly accepted accounting definition is the residual amount of income or profit made by a company during a fiscal period and is the numerical difference between the company's revenues and all expenses, including taxes. In the case of Ontario Hydro, net income is planned as part of setting rates to supply "power at cost" to municipal electric utilities and other customers. The interpretation of power at cost is a matter which Hydro decides, based on the provisions of the Power Corporation Act and on other policy and financial considerations. Part of the authorized cost of power is net income, the provisions for which are set out primarily in section 75 of the Power Corporation Act.

1.1 POWER AT COST AND THE POWER CORPORATION ACT

- 1.1.1 Since its inception in 1906 as the Hydro-Electric Power Corporation of Ontario, Ontario Hydro ("Hydro", or "the Corporation"), has operated as a public power authority. Its mandate is to build, operate and maintain a bulk electrical system consisting of generation, transmission and distribution facilities to supply reliable *power at cost* to municipal electric distribution companies and other customers.

1.1.2 Hydro is a crown corporation and has generally been considered as an arm of the Government of Ontario ("the government" or "the province") and an instrument of public policy. Hydro has broadened its mandate several times in response to government policy, for example to include supply to the rural distribution system and the power district.

1.1.3 The current authority for charging for power at cost is found in sections 69, 75 and 90 of the Power Corporation Act ("PCA"). Of these, section 75, the principal authority for net income policy, reads as follows:

75. Notwithstanding anything in any general or special Act passed before the 3rd day of April, 1928, or in any contract entered into before the 3rd day of April, 1928, and, except where under the terms of any such contract power is to be supplied to a municipal corporation at a fixed price, the price payable for power by any municipal corporation is the cost to the Corporation, as determined by it, of supplying and delivering power to the municipal corporation, including the municipal corporation's proportion, as adjusted by the Corporation, of,

- (a) the cost of operation, maintenance, depreciation and insurance of the works and the cost of administration of the Corporation;
- (aa) the cost of an energy conservation program;
- (ab) the difference in the revenue of the Corporation mentioned in section 90a;
- (b) interest and expenses of debt service and interest credited on the balances remaining from time to time to the credit of reserve accounts established under this Act;
- (c) an annual sum sufficient to form in forty years, with interest at 4 per cent per year, a sinking fund for the repayment of the advances made by the Province of Ontario under this Act for the cost of the works, for the repayment of any other indebtedness incurred or assumed

by the Corporation in respect of the cost of the works, and for the restoration of any reserve or other funds of the Corporation utilized for the payment of the costs of the works; and

- (d) an amount to be determined by the Corporation for the purposes of sections 13 and 15 and clause 14 (1)(c).

1.1.4 The key points to note are:

- The price payable for power by a municipal corporation is the cost to Hydro of supplying power to that municipal corporation as determined by Hydro itself;
- The rates for direct customers and rural customers are not encompassed by section 75 of the PCA, but similar provisions are prescribed by sections 69 and 90 (see below).
- Cost is partially defined to include operating, maintenance and administrative cost (OM & A), depreciation, interest related to debt service and interest (if any) on reserve amounts.
- Provision is made for a "sinking fund" (section 16) based on retirement of debt associated with capital plant at the end of a 40 year period, including interest at 4 percent per year ("the SDR Amount"). This is a mandatory annual requirement. The accumulated provisions are termed the Statutory Debt Retirement ("SDR") fund.
- Provision is also made for certain reserve funds, including a charge for self insurance section 13(b) and rate stabilization and contingencies ("the RSC Provision"). The accumulated provisions are termed the Reserve for Stabilization of Rates and Contingencies ("RSRC").
- Interest can be levied on the accumulated RSRC and, if it is levied, must be charged to rates payable by municipal electric utilities.

- 1.1.5 Section 69 of the PCA provides that electricity service may be supplied to any other person (such as to direct industrial and rural customers), upon such terms and conditions as the Corporation considers proper. It also provides that any "net surplus" shall be applied for the purpose of stabilizing the rates of the Corporation. This net surplus is determined by deducting from the revenue received from supply of power to such persons, all monies placed to the credit of the (now obsolete) Frequency Standardization Reserve Account and an amount determined by the Corporation for costs and charges as enumerated in section 75 for municipal utilities. By inference this net surplus could be positive or negative. Section 69(3) ensures that costs recovered elsewhere are not recovered a second time from municipal corporations, which in accordance with section 7(3), may be required to bear certain costs that have proved or may ultimately prove beneficial to them.
- 1.1.6 Section 90 of the PCA requires the Corporation to fix the rates charged to the rural power district customers. Section 90a provides that electricity may be supplied to the rural power district at rates which are forecast to fall short of recovering the cost of supplying such power, in which case the price payable for power by municipalities, and any other person supplied with power by the Corporation, may be increased to recover the forecast shortfall.
- 1.1.7 The provisions of sections 75c and 75d and the interest charges (if any) on Reserves and the corresponding provisions of sections 69 and 90 are accounted for as *net income* by Hydro, since these provisions represent amounts over and beyond the direct accounting cost of power.
- 1.1.8 The net income provisions of the PCA are for specific, identified purposes related to paying off debt, and having reserves to meet contingencies and to make up any shortfall between forecast and actual revenues.

1.1.9 Hydro stated that, other than the SDR Amount, the provisions made for net income in recent years were no longer solely related to these purposes, but would, nonetheless, be used to achieve these specific objectives as well as other, broader, financial objectives.

1.1.10 Hydro also stated that amounts contributed for debt retirement had been used as internal funds to retire maturing external debt, thereby reducing net borrowing. The annual amounts contributed to the reserve accounts including the RSC Provision had been a source of internally generated funds used to:

- meet shortfalls between forecast and actual revenue;
- allow for rate smoothing; and
- reduce annual borrowing requirements.

1.1.11 Hydro stated that the accumulated SDR and RSRC accounts were the equivalent of equity contributed by its customers, since they were both sources of internally generated funds. Accordingly, the Statement of Financial Position (Balance Sheet) showed these amounts under the heading "Equity".

1.1.12 Hydro also stated that neither the accumulated SDR Amounts, nor the RSRC are liquid reserve accounts. The accumulated SDR Amounts are not used as a sinking fund attached to specific debt issues and there is no actual cash reserve in the contributed RSRC account to meet contingencies. Hydro merely collects more or less funds annually into this account.

Target Net Income

1.1.13 Hydro sets an annual target level of net income which is based on three considerations:

- capital availability;
- expected pattern of rate increases; and
- financial soundness.

- 1.1.14 Hydro historically has used various formulae to arrive at target net income levels which it considers will lead to appropriate financial performance over the longer term.

Provincial Debt Guarantee

- 1.1.15 Hydro's sole source of external financing is through the issuance of debt. This debt is guaranteed by the province and hence the financial performance of Hydro is much less critical than if the Corporation were on a completely stand-alone basis, with only its ability to set its own rates as the underpinning for credit worthiness and debt issues.

- 1.1.16 Theoretically the provincial guarantee ensures that Hydro has a high credit rating, but, given the long historical relationship between the province and Hydro, it is unclear to what degree removal of the guarantee would actually cause a decrease in Hydro's credit rating and result in higher borrowing costs.

- 1.1.17 The Board, in the past, has heard evidence that 25 to 50 basis points would be the expected net change in Hydro's debt issuance costs if Hydro operated on a stand-alone basis. In this hearing Hydro's expert estimated that if removal of the guarantee resulted in a downgrading of Hydro's credit rating from AAA to AA or possibly A, the change would be closer to 25 basis points under normal market conditions.

- 1.1.18 The province now charges Hydro a fee for the debt guarantee, calculated as 50 basis points on Hydro's average outstanding debt in any year. The province also approves Hydro's major long-term debt issues.

Provincial Policy on Financial Soundness

- 1.1.19 The province has been concerned with Hydro's financial soundness and the need for Hydro to generate adequate net income. Three letters from

Provincial Treasurers were entered in evidence in the hearing. All of these indicated the need for Hydro to operate as if it were a stand-alone entity, to ensure financial soundness so that there would be no impact on the province's credit rating or ability to raise debt, and to achieve certain levels of financial performance through net income provisions, in order to give effect to these basic policy requirements.

- 1.1.20 The financial performance objectives indicated in these letters were an adequate interest coverage and the maintenance of an appropriate debt/equity ratio.

1.2 PREVIOUS REVIEWS OF HYDRO'S NET INCOME POLICY

- 1.2.1 The Board has reviewed some of the significant reports and reviews of Hydro's net income policy prepared during the last 20 years.

Task Force Hydro

- 1.2.2 Task Force Hydro (1971) reached the following conclusions regarding financial objectives for Hydro:

Financial objectives should be based on the proposition that Hydro should strive to remain at arm's length from Government in matters of financial policy to the degree that this is possible, having regard for such matters as the Provincial guarantee of its debt and the necessity to comply with Provincial fiscal policy.

- 1.2.3 The following specific financial objectives were suggested:

- To finance capital facilities at the lowest cost consistent with financially sound operation. This is a natural concomitant of Hydro's continued goal to "meet the demand for electricity in Ontario at the lowest feasible cost";

- To allocate the cost of its capital facilities equitably between present and future customers;
- To manage financial reserves so as to achieve a reasonably smooth rate of change in bulk power charges; and
- To maintain a level of liquidity appropriate to the attainment of the above objectives.

1.2.4 On the debt versus equity issue Task Force Hydro noted that an important consideration was Hydro's relationship to the province and the use by Hydro of internal funds to offset financial risk:

... it would seem that in spite of the close relationship between Hydro and the Province of Ontario, investors do not regard Hydro bonds as completely riskless investments. This in turn implies that there is some role for equity capital as an "absorber of risk" and that the "cost" of such capital, except at very high debt/equity ratio levels, should be regarded as being at least as high as, say, the yield on Ontario Government bonds.

While the presence of risks justifies some use of internal funds, such funds should not be used beyond the point where those risks are adequately covered.

... the "excessive" use of internal funds, should be avoided since it may not only be costly, but as we earlier indicated it would diminish the efficiency of capital allocation. On the other hand, since the existing generation of customers does enjoy the benefits of capital contributions made by previous generations, it seems logical that today's customers should be asked to make some contribution for the benefit of future customers.

1.2.5 Task Force Hydro went on to recommend that:

The mix of internal and external funds be established with the objective of minimizing the cost of capital over the long term.

- 1.2.6 In sum, the view of Task Force Hydro was that Hydro should accumulate equity capital for the sake of financial soundness and should balance internally and externally generated funds to provide the lowest long-term cost of capital. The focus of financial policy was on debt/equity and cost of capital, and not on interest coverage. In this respect, Hydro was viewed as similar to other public and investor-owned utilities in Canada.

Select Committee of the Legislature

- 1.2.7 The 1976 Select Committee Report on the subject of capital charges and net income noted that:

The entire issue of Hydro's capital charges is an extremely complex one. It involves an accounting charge for depreciation, a formula charge for interest, a statutory appropriation for debt retirement and a non statutory appropriation to ensure *financial soundness*. (emphasis added by the Board)

- 1.2.8 The Committee also looked at Hydro's financial integrity and overall provincial financing and noted the interdependence of Hydro and the province in this respect. The Committee concluded that the primary objective of the capital charges should be to maintain the financial condition of Hydro so that it does not contribute to a deterioration in the credit rating of the province.

- 1.2.9 The Committee went on to recommend a level of net income for 1976 sufficient to ensure an interest coverage ratio of 1.35.

Previous OEB Hydro Reports

- 1.2.10 The Board has considered net income requirements as part of its annual Hydro rate reviews since 1975. Extensive review and discussion of net income policy appeared in H.R. 12, H.R. 15, H.R. 16 and H.R. 17.

- 1.2.11 In H.R. 15, the Board examined Hydro's statutory mandate to price electricity at cost. The Board noted that net income is comprised solely of "costs" which are required by section 75 of the PCA to be recovered in rates. While noting the discretion which Hydro's Board of Directors has in setting net income, the Board strongly expressed the view that cost concepts should play a role in the determination of Hydro's net income. Cost concepts include relationships to the cost of other capital, such as debt, and also include market-based equity concepts. Interest coverage ratios and rate smoothing considerations, used by Hydro to determine net income, are not cost concepts in accordance with the usual meaning of cost.
- 1.2.12 The Board, while accepting the importance of Hydro's other criteria, recommended that Hydro's level of net income should be based also on the cost of Hydro's equity. The concept of financial soundness should therefore extend beyond Hydro's focus on debt capital to include all capital, including equity and, hence, focus on net income as well as on interest costs.
- 1.2.13 In H.R.17, the Board's Report contained an extensive 70 page review of net income policy, which concluded that the PCA did not preclude consideration of return on equity as part of the cost of power to be charged to customers. The Board also concluded that a return on capital approach, including a market-based return on equity, was necessary "to ensure financial soundness, assure intragenerational (sic) equity and appropriate pricing of electricity consistent with economic efficiency considerations".
- 1.2.14 The direction contained in the Minister's reference letter for H.R. 18 specifically noted that financial soundness was a criterion for the Board to consider.
- 1.2.15 The Board in its Report in H.R. 18 expressed concern about Hydro's net income policy, its implementation and the weakening of the Corporation's

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financial performance indicators. The Board therefore called for a review of net income policy in H.R. 19, with external assistance as necessary.

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2. **HYDRO'S CURRENT AND PROPOSED NET INCOME POLICIES**

Hydro's current and proposed net income policies are based on the provisions of the Power Corporation Act and require translation into the financial performance indicators considered by debt rating agencies and other participants in bond markets in Canada, the U.S.A. and around the world.

2.1 **HYDRO'S CURRENT NET INCOME POLICY**

2.1.1 Hydro's current net income policy based on an intense study titled "A Review of Net Income Targets", was approved by its Board of Directors in May 1983. The resultant net income policy is reproduced as Appendix A1 to this Report and was reviewed by the OEB in H.R. 12.

2.1.2 The summary of the study succinctly reflects the philosophy and principles which underpin the existing net income policy:

The Corporation's net income targets are important to its customers, bondholders, and the Provincial Government. Appropriate levels of net income allow the Corporation to: more fairly allocate costs between current and future customers; assure bondholders that debt obligations will be met; finance facilities that provide a reliable electricity supply; and provide reasonable assurance of being able to operate without direct financial support

from the Government. The current policy for establishing the level of net income included in rates is based on three factors, namely, level of rate increase, financial soundness, and capital availability. These factors remain as cornerstones in the development of net income requirements...

The Corporation's debt is guaranteed by the Province, and this is the primary factor in determining the triple-A credit rating applied to that debt. Nevertheless, the financial community monitors the Corporation's financial results with emphasis on their stability and the ability of the Corporation to meet its debt obligations without direct government support. Key indicators of financial soundness used by the financial community are measures of: asset protection, as measured by the debt ratio; fixed charge coverage, as measured by interest coverage and cash flow coverage ratios; and capital needs. The Corporation currently uses its debt ratio and interest coverage ratio as primary indicators of financial soundness. It is recommended that the quality of interest coverage and the cash flow coverage ratio also be used as indicators of financial soundness when planning net income levels. While return on equity is commonly used by investor-owned companies to set net income targets, it is not seen to be an appropriate approach for the Corporation.

Two important considerations in establishing net income targets for the Corporation are the need to maintain financial soundness, particularly, during periods of high construction activity and to smooth large cost changes when new facilities are placed in-service...

2.1.3

The specific recommendations of the study are also important to note:

- The interest coverage ratio and debt ratio be retained as *primary indicators of financial soundness*. (emphasis added)
The quality of interest coverage and cash flow coverage ratios are to be used as additional financial soundness indicators in the planning of the level of the interest coverage ratio.
- To maintain a consistent level of financial soundness, the level of interest coverage should increase to offset declines in

the quality of interest coverage provided to bondholders during periods with high levels of construction activity. Similarly it should decrease in response to improvements in the quality of interest coverage as facilities are placed in-service.

- Net income targets be based on the maintenance of a coverage of 1.05 on interest charged to operations combined with a coverage of 1.50 on interest capitalized.
- A cash flow coverage greater than 1 be maintained.
- The long-term target debt ratio should not be fixed, but should be independent of the target interest coverage. However, significant deterioration of the debt ratio should be avoided.
- The borrowing requirement for the near term to be assessed against the expected capital availability and, if required, planned net income adjusted upward above the level indicated by the target interest coverage.

Alternatives Considered in 1983

2.1.4 In arriving at its current net income policy and targets Hydro reviewed four alternatives:

1. Interest coverage of 1.25 (the pre-1983 approach);
2. Split or composite interest coverage of 1.05 on interest to operations and 1.50 on interest capitalized;
3. 100 percent debt financing (no net income); and
4. Return on equity, with a 3 percent premium over the cost of debt.

- 2.1.5 The Corporation concluded that Alternative 2 was preferred since it would somewhat smooth the effect of capital additions at in-service dates on the fixed charges in the rate year of such additions.
- 2.1.6 The Corporation also concluded that:
...the use of return on equity to determine net income targets is inappropriate for Ontario Hydro. However it is important that an appropriate return on equity be factored into the economic analysis of electricity supply alternatives.
- 2.1.7 In rejecting a return on equity approach, Hydro's 1983 study noted that:
In Ontario Hydro's case, the only source of both equity and return on equity is the customer. Hence, if return on equity is used to set net income targets, then customers will pay a return on money they have previously contributed. Initially, this approach results in higher electricity rates and over the long-term, results in a lower debt ratio than would occur with a larger reliance on debt financing. Therefore, *a return on equity greater than the cost of debt* does not seem appropriate for Ontario Hydro. (emphasis added)
- 2.1.8 Hydro rejected the proposed interest coverage target of 1.25 because, under the Hydro's accounting treatment, uniform amounts (in real dollar terms) would not be charged to cover fixed costs over the life of major capital facilities. For a utility like Hydro, with a diverse capital base, this is less important than for less diversified utilities. However, the analysis showed a significant standard deviation in rate increases of 60 percent. This compared to 40 percent for the split interest coverage alternative (Alternative 2).
- 2.1.9 The Hydro study concluded that:
A net income target based on 1.05 coverage of interest charged to operations and 1.50 coverage of interest capitalized based on current projections will allow the Corporation to operate in a financially self sustaining manner and produce a fair cost recovery pattern.

- 2.1.10 The proforma projections of financial performance for the four alternatives indicated that, in the period 1984-1990, the financial indicators would improve for all options, except for 100 percent debt financing. Only the 1.25 interest coverage policy and the return on equity approaches were projected to result in debt/equity ratios of 76 percent or less and in interest coverage of 1.25 or greater.

Table 2.1 Proforma Ratios for Options examined in 1983

Financial Ratios		Interest Coverage		Debt 100%	Return on Equity
		1.25x	1.05/1.50		
Debt Ratio	1983	0.844	0.844	0.844	0.844
	1990	0.763	0.792	0.900	0.691
Interest Coverage	1983	1.22	1.22	1.22	1.22
	1990	1.25	1.17	1.0	1.57
Cash Flow Coverage	1983	0.83	0.83	0.83	0.83
	1990	1.27	1.19	1.02	1.60
Net Income	1983	441	441	441	441
	1990	778	549	0	1619
Reserve Additions	1990	5587	4589	0	8149
Rate increase % cumulative	1983-90	65	63	61	80
Source: Exhibit 9 H.R. 12 Appendix F Attach. 6B					
Note: Hydro's preferred option shown in shaded column					

Financial Performance and Net Income Targets 1984 to 1990

- 2.1.11 In Table 2.2 are shown the 1983 projections for interest coverage and debt ratio under the existing net income policy and target formulation together with actual results.

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**Table 2.2 Comparison of Forecast & Actual Net Income Under Existing Policy
& Targets 1984 to 1990**
(\$ millions)

		1984	1985	Year 1986	1987	1988	1989	1990	Total
TARGET NET INCOME	f	659	520	561	500	n/a	n/a	549	3800
	a	646	600	548	521	549	629	663	4156
ACHIEVED NET INCOME	a	575	360	247	271	626	699	551	3329
UNDER/OVER ACHIEVEMENT	a	-71	-240	-301	-250	+77	+70	-112	-827
Average									
INTEREST COVERAGE RATIO	f	1.29	1.21	1.21	1.18	n/a	n/a	1.17	1.20
	a	1.25	1.14	1.09	1.10	1.23	1.24	1.18	1.18
DEBT/EQUITY RATIO	f	0.835	0.825	0.816	0.808	n/a	n/a	0.792	0.815
	a	0.833	0.830	0.835	0.836	0.829	0.817	0.818	0.828
CASH FLOW COVERAGE	f	1.03	1.13	1.10	1.15	n/a	n/a	1.19	1.12
	a	0.96	1.02	1.05	1.08	1.19	1.16	1.13	1.08
Sources: Exhibit 8.10 H.R. 12 and Exhibit 1.14 H.R. 19 Note: f = forecast in 1983, a = actual 1990 figures latest estimate based on May 1990 Update									

2.1.12

It can be seen from Table 2.2 that the 1983 projection of net income targets and the annual net income targets set by Hydro's Board are reasonably close. However, apart from two years (1988 and 1989) when significant delays to forecast in-service dates for Darlington units occurred, Hydro has underachieved its net income targets for a variety of reasons. This has resulted in a cumulative shortfall of \$827 million, or an average of over \$100 million per year over the seven-year period. In some of these years the achieved net income has also fallen below the SDR Amount. As a result, under the current net income policy, the interest coverage has been below target and the debt ratio above target levels in the period 1984-1990.

**Projected Financial Performance under Current Net Income Policy
1991-1993**

2.1.13 In Phase I of H.R. 19, the Board reviewed Hydro's projected financial performance under its current net income policy. Data from Tables 1.4 and 9.1 of the Board's report are reproduced in Table 2.3

Table 2.3 Projected Financial Performance 1991 to 1993 Current Dollars

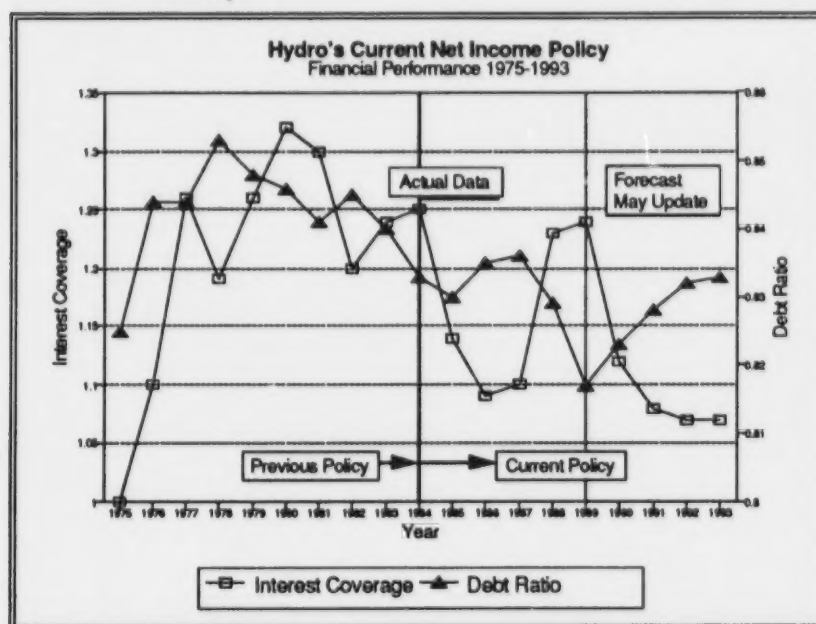
(\$millions)

Financial Parameter	1991	1992	1993	Total
SDR Amount	451	510	573	1534
Net Income Target	535	468	390	1393
Forecast	262	251	275	788
Shortfall	273	259	298	830
Average				
Interest Coverage	1.08	1.07	1.07	1.07
Debt Ratio	0.828	0.832	0.833	0.832
Rate Increase	7.8	8.3	5.2	7.1
Note: Shortfall is relative either to Target or the SDR Amount, whichever is greater. Sources Tables 1.4 and 9.1 of H.R. 19 report; Update to T1.8.1 Exhibit 9.3.2				

2.1.14 It can be seen that underachievement of net income by significant amounts is forecast in the period 1991 to 1993. In all three years, with planned rate increases proposed for 1991 and beyond, forecast net income falls below both the SDR Amount and the net income target. The interest coverage ratio continues its downward trend and the debt ratio continues to increase.

- 2.1.15 The actual and forecast interest coverage ratio and debt ratio from 1975 to 1993 are shown graphically in Figure 2.1. The weakening of the interest coverage and debt ratio under the current policy is clear.

Figure 2.1: Financial Performance under Current Net Income Policy



Source: Exhibit 9.13 and May 1990 update

Positions of the Parties

Hydro

- 2.1.16 Hydro noted that in its review of net income policy, it found broad support for the existing policy and for the fundamental principles on which it is based. The practice of balancing financial soundness and rate considerations provides the Corporation with the flexibility it requires to

respond effectively to short-term needs. Hydro submitted that the review of net income issues in H.R. 19 has confirmed the continued relevance of its basic net income policy.

AMPCO

- 2.1.17 AMPCO noted that the adoption of more exacting interest coverage targets in 1983 had the effect of increasing power rates well in excess of inflation. As a result, Hydro's cash flow coverage ratio increased steadily after 1983 and the debt ratio declined from over 84.5 percent in 1980, to 81.7 percent in 1989. Given the rate increase for 1991, it will most assuredly fall to around 81 percent, well within the preferred range. AMPCO submitted that this level of asset protection is more than that required by financial markets.

The MEA

- 2.1.18 The MEA submitted that Hydro's 1983 net income policy was designed to provide for future levels of financial performance similar to those achieved in the 1970s and was also expected to cover the SDR Amount plus an adequate return on the RSRC. However, during the period from 1983 to 1990, Hydro has failed to meet its net income targets in all but two years (1983 and 1989) when in-service delays occurred subsequent to the rate proposal.
- 2.1.19 The MEA also submitted that Hydro's financial forecasts have been on the optimistic side and the 1991 debt and interest coverage ratios are forecast respectively at 82.8 percent and 1.08. This results in a debt ratio well above, and an interest coverage ratio well below, projections made in 1983 and considered desirable, both at the time and in the recent review by Hydro and its expert consultants. While it is generally acknowledged that the predominant factor in Hydro's AAA rating is the debt guarantee, it cannot be assumed that Hydro's financial performance can be disregarded.

If Hydro's financial performance were to worsen significantly, given the portion of the total provincial debt it represents (41 percent), the credit rating of the province could be downgraded, resulting in increased costs on both Hydro debt and all other provincial debt.

Board Staff

2.1.20 Board Staff submitted that, in addition to the uncertainties noted by the Board in its Interim Report, Hydro was facing significant current and future cost pressures, including wage settlements, pension litigation settlements, major capital expansion plans, as set out in the Demand/Supply Plan ("DSP"), and uncertain environmental and decommissioning costs. It also noted that economic conditions had worsened over the past few months and that the province was now in recession and experiencing a growing budget deficit. It further submitted that uncertainties regarding government policies and plans for Hydro were another important area of consideration.

2.1.21 Board Staff submitted that these uncertainties and the prospects for tightening capital markets and increased competition for funds, reinforced the need for Hydro to adopt a net income policy that will ensure independent financial soundness.

2.2 HYDRO'S PROPOSED NET INCOME POLICY

2.2.1 Hydro's current net income policy will remain in effect for the 1991 rate year. Starting in 1992, Hydro proposes a new net income policy based on setting target net income equal to the SDR Amount plus 7.5 percent interest on the accumulated RSRC at the beginning of the rate year, i.e:

$$\text{Net Income} = [\text{SDR Amount} + (0.075 \times \text{Accumulated RSRC})]$$

Consultants Study - J.P. Morgan Securities Inc.

- 2.2.2 Hydro commissioned J.P. Morgan Securities Inc. ("J.P. Morgan") to undertake a review of its net income policy. The Terms of Reference reproduced as Appendix A2 to this Report, require that any new policy must conform with the PCA. The consultants were also directed not to reconsider any alternatives previously rejected by Hydro because of non-conformance with the PCA, including a market-based return on equity.
- 2.2.3 The consultants conducted a review of Hydro's financial performance and credit worthiness in the context of utility bond markets in Canada, Europe, and the United States, and in relation to the performance of other public and private power utilities in Canada and the U.S.A.
- 2.2.4 The study found that Hydro was financially sound compared to other utilities and has a debt ratio lower than the Canadian average. Quality of interest coverage was below average and cash flow and interest coverage were at, or slightly below, the Canadian utility average. The study noted that, given the existence of the provincial guarantee, Hydro could access both North American and European bond markets for its capital needs with the highest credit rating.
- 2.2.5 The consultants stated that the analysis of credit fundamentals is becoming more important for bond rating services and lenders, due to economic and financial considerations external to Hydro. Therefore Hydro should ensure strong financial performance, given the projected needs for capital for its planned implementation of the DSP.
- 2.2.6 The Study concluded as follows:
- Hydro's existing net income policy was appropriate for recent history; however, it should be improved upon for the future.

- Of the measures of financial health — the debt ratio, cash flow coverage, quality of interest coverage and the level of interest coverage — the level of interest coverage is the most indicative of Hydro's financial health. This ratio will be focused on most closely by the financial community.
- The level of interest coverage measure should be no lower than 1.20 in each of the projected years. If possible, the level should be closer to 1.30.
- All financial measures should be improved over their present levels because of: a shift toward more emphasis on credit fundamentals; uncertainty associated with a large new building program; changes in demand forecasts; and potential changes in national and provincial economies, financial policies and borrowing programs.
- Specific target goals for the level of interest coverage, the debt ratio, and cash flow coverage should be set and clearly communicated to the financial community.
- Achievement of these targets is of primary importance to the financial community.
- The guarantee of the province of Ontario is the primary credit strength for the vast majority of investors.
- Improvement of current financial health is critical to avoid the use of the guarantee.
- Calling on the provincial guarantee would have unpredictable consequences in the capital markets for Ontario Hydro.

2.2.7

The study recommended an interest coverage ratio of 1.20 to 1.30 as the most appropriate financial soundness target to accompany the provincial guarantee. The proposed coverage is similar to Alternative 1 (1.25 interest coverage, see page 21), which Hydro rejected in 1983, because of the variability of associated rate increases.

- 2.2.8 Mr. Muller of J.P. Morgan, who testified as an expert witness for Ontario Hydro, indicated that the study gathered comparable financial data on other utilities throughout the world, and the consultants then worked with traders and brokers to determine how the financial community and the rating agencies looked at Hydro. The findings were that the provincial debt guarantee is of overriding importance. However, of secondary importance is the financial health of Hydro as measured by interest coverage, and to a lesser degree, debt ratio. The review also indicated that the financial community had little understanding of Hydro's current net income policy.
- 2.2.9 Interest coverage, the debt ratio and other financial performance measures are normally examined by financial analysts and rating agencies to determine a corporation's credit rating. In the case of Hydro, where a stand-alone credit rating is not being made because of the debt guarantee, a snapshot of a single ratio such as interest coverage is usually sufficient.
- 2.2.10 Mr. Muller ventured his opinion that Ontario Hydro would be relatively well received in the financial markets were it to issue debt without the provincial guarantee. At present the "quality spreads" throughout the world are extremely tight, so at this time there is not much additional interest cost being paid by an AA or A rated borrower versus an AAA borrower. The provincial guarantee could not be replaced with commercial bank guarantees, since there was insufficient AAA credit available among the commercial banks.
- 2.2.11 Mr. Muller stated that without the guarantee, Hydro would have to look financially much more like a U.S. public power entity, such as the Tennessee Valley Authority or the New York Power Authority (which, like Hydro, have monopolistic control of their markets and prices), rather than an investor-owned utility, such as Consolidated Edison or Pacific Gas and Electric.

- 2.2.12 While a level of interest coverage of 1.20 to 1.30 should be attained, in Mr. Muller's view it was not critical to meet this in every year. On average over time, the interest coverage ratio should not fall below 1.20.
- 2.2.13 Mr. Muller agreed that Hydro did not have a good track record in meeting net income and financial performance targets and its ratios were slipping somewhat at the moment, although not seriously so. If Hydro's interest coverage consistently fell below the 1.20 floor and continued to be in the range of 1.15 to 1.17, that would create some anxiety on the part of investors. The target band of 1.20 to 1.30 should lead to achievement of average interest coverage of 1.20 or better over time.
- 2.2.14 Mr. Muller emphasized that the principal reason for improving Hydro's interest coverage was the possibility that external factors would result in more importance being placed on credit fundamentals in debt markets in future. He cited the fact that some Canadian electric utilities were bordering on poor financial performance, although this did not apply to either Ontario Hydro or Hydro Quebec. To avoid being lumped in with borderline utilities, such as Nova Scotia Power and B.C. Hydro, it was prudent for Hydro to improve its financial ratios.
- 2.2.15 Mr. Muller offered that the appropriate range of the interest coverage ratio should change as uncertainties increase or decrease in the outlook period. At the present time, there was nothing in the outlook that would lead him to recommend interest coverage higher than 1.30 times. Hydro's projected capital requirements were below the level where risk would increase to the point of requiring higher coverage ratios. The likelihood of a sustained slowing in the provincial economy, as opposed to cyclical economic factors, such as a recession, was not high.
- 2.2.16 Mr. Muller indicated that although the economic outlook used in the study was for tighter credit and a weakening of the Canadian and Ontario economies, should the situation worsen and the provincial deficit rise to

over a billion dollars, there would likely be a review of Ontario and Ontario Hydro's credit rating. To date Hydro's borrowings have had no discernable effect on the province's rate of interest.

- 2.2.17 Mr. Muller indicated that the marketplace had not altered its view of Ontario following the 1990 provincial election. However, if Hydro's nuclear program were curtailed it would be difficult to assess the financial implications for Hydro. He ventured that if the nuclear platform of the new government became a reality, the global marketplace would then focus not only on Hydro, but on the provincial government itself: "investors would take a very close look at Ontario Hydro as well as the province's credit to decide where you get provision of future power".
- 2.2.18 Mr. Muller stated that in his opinion the province's credit rating had "bounced around" a bit over the past decade. The rating agencies felt that perhaps they had changed their ratings too often and were now looking for more consistency. He ventured that the rating agencies would be more patient in environments such as those during a shallow recession with the attendant development of deficits. Long-term factors, rather than short-term factors were more important. A change in the provincial credit rating would affect both the province and Hydro. For example, an AA rating would cost 10 to 15 basis points more than an AAA rating in current markets.
- 2.2.19 Mr. Muller categorically rejected a market-based return on equity as a valid consideration for Hydro. In Hydro's situation the concept of equity was not really valid and the entry titled "Equity" on Hydro's balance sheet could equally be represented as "Net Assets over Liabilities". A return on equity approach to net income was not considered by J.P. Morgan nor was it an approach they believed Hydro should take. Mr. Muller stated he had a problem with the entire concept of return on equity for government-owned utilities such as Hydro.

- 2.2.20 In regard to Hydro's proposed reserve-based net income policy, Mr. Muller stated that the investment community translated this into an interest coverage ratio and there was probably no more than "a couple of people in the whole investor community that understand it, and that would include the rating agencies". However this was not important since Hydro bonds were purchased on the strength of the provincial guarantee.
- 2.2.21 Offering the SDR and RSRC provisions to the financial community as alternatives to the interest coverage ratio would not be useful. He noted that he was still having a great deal of difficulty understanding how the SDR and the RSRC were developed and the investor community was likely to have even more difficulty with the basics of the SDR.

Hydro's Report on Net Income Policy

- 2.2.22 Hydro, in its review for its Board of Directors, noted that by 1992 the existing policy would not provide sufficient net income to meet the SDR Amount. It also drew attention to the fact that the PCA had been amended without changes to sections pertaining to net income. It then proceeded to address five factors which it viewed as important in the development of a net income policy:
- the requirements of the PCA;
 - financial objectives of the Corporation including financial soundness, and intergenerational equity;
 - position of the Ontario government;
 - views of the stakeholders; and
 - consistency with corporate strategic objectives including financial flexibility, demand management, and rate smoothing.
- 2.2.23 Hydro's review stated that the PCA precludes commercial rates of return (on equity) in supplying power to municipal corporations. It also indicated that the annual SDR Amount was mandatory, whereas the RSC provision

was discretionary, based on the need to allow for stabilization of rates and for major contingencies such as write-offs. The current RSRC level of \$2.4 billion was assumed to be adequate for today's conditions.

- 2.2.24 The payment of interest on the RSRC was noted to be discretionary and a mechanism which could be used to ensure that the adequacy of the RSRC was not diluted in future.
- 2.2.25 With respect to financial soundness, Hydro's review noted that the power at cost principle meant low rates, which among other factors implied striving to attract capital at favourable rates. In addition, over the years, various Provincial Treasurers have directed that Hydro be financially self-supporting as far as its debt was concerned and that it exhibit satisfactory long-term financial performance, so as not to prejudice the provincial credit rating. The J.P. Morgan recommendation for interest coverage to be maintained in the 1.20 to 1.30 range was accepted.
- 2.2.26 On the issue of inter-generational equity, Hydro noted that the concept of fairness is implicit in the notion of power at cost and is also an expectation of its customer groups when rates are set. This fairness concept implies some consistency in equity contributions by customers over time.
- 2.2.27 In terms of Corporate strategic objectives, the net income policy should allow the continued supply of electricity at reasonable rates as noted in the PCA, and in the 1989 Memorandum of Understanding. It should also ensure that demand management programs are not affected by underpricing electricity.
- 2.2.28 Hydro reviewed both reserve-based and fixed interest coverage formulae. Simulations were run to forecast interest coverage, the debt ratio and real rate level under a number of variations on these approaches:

Reserve Based:

- SDR Amount only
- $\text{SDR} + (0.05 \times \text{RSRC})$
- $\text{SDR} + (0.075 \times \text{RSRC})$
- $\text{SDR} + (\text{Embedded Cost of Debt} \times \text{RSRC})$

Fixed Interest Coverage:

- 1.20 x interest coverage
- 1.25 x interest coverage
- 1.30 x interest coverage

Table 2.4 shows Hydro's summary of these alternatives taken from its Report to the Hydro Board on its proposed net income policy.

2.2.29

Hydro concluded, for the following, reasons that the preferred alternative was an annual provision equal to the SDR amount plus interest on the RRSC at 7.5 percent annually, corresponding to forecast annual load growth of 2.5 percent plus inflation forecast at 5 percent:

- it complies with the statutory requirements as set out in the PCA and is consistent with Hydro's policy of providing power at cost while maintaining financial soundness;
- it results in financial performance over the long term at a level suggested by the majority of stakeholders;
- it provides for contribution to equity at reasonable levels;
- it results in reasonable rates which will be stabilized in accordance with Ontario Hydro's tradition; and
- it is consistent with other policy objectives in that it provides sufficient flexibility and does not compromise demand management initiatives by underpricing electricity.

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Table 2.4 Comparison of Reserve-Based and Fixed Interest Coverage Approaches

<u>OPTION</u>	<u>Times Interest Coverage</u>	<u>Debt Ratio</u>	<u>Net Income as % of Primary Revenue (%)</u>	<u>Rate Impact</u>	<u>Comments</u>
Actual					
Avg. 1974-1982	1.23	0.830	10.0	-	
Avg. 1983-1990	1.18	0.830	9.8	-	
SDR					
Avg. 1992-2000	1.18	0.801	6.4	100.0	- financial performance slightly below minimum recom. by fin. community - the real value of the RSRC declines, reducing its ability to cover future contingencies which may grow with inflation and the growth of the system
Avg. 2001-2009	1.18	0.815	6.6	101.5	- future customers benefit from RSRC contributed by past customers - net income a lower % of revenue than in recent past - after initial improvement, debt ratio deteriorates during new construction cycle
SDR + (8.05 x RSRC)					
Avg. 1992-2000	1.22	0.788	7.7	100.5	- maintains the current level of RSRC in real terms - net income as a % of revenue less than in the past
Avg. 2001-2009	1.22	0.793	7.7	101.6	financial performance only slightly above the minimum recommended by the financial community and average of recent past
SDR + (8.075 x RSRC)					
Avg. 1992-2000	1.24	0.781	8.6	101.5	- real level of RSRC grows with system (load growth) - net income as a % of revenue slightly below recent past
Avg. 2001-2009	1.26	0.775	8.9	101.9	financial performance improves during the 1990s and remains relatively stable through the new construction cycle
SDR + (ECD x RSRC)					
Avg. 1992-2000	1.29	0.771	9.9	102.4	- Embedded Cost of Debt (ECD) - customers neutral to past contributions to RSRC ie. costed as if debt
Avg. 2001-2009	1.34	0.745	11.1	102.8	- for the decade of the 90s net income as a % of revenue similar to recent past, but higher for the second decade - improvement in financial performance during 1990s and no significant deterioration during the new construction cycle - Debt ratio stabilizes @ 0.75 - for the most of the period, financial performance more favourable than what has been found prudent or necessary in the past
Interest Coverage 1.20					
Avg. 1992-2000	1.20	0.792	7.2	100.5	minimum level of financial performance as recommended by financial comm.
Avg. 2001-2009	1.20	0.805	7.2	101.5	- debt ratio improves to 0.78 by 1999 then erodes, returning to current level of 0.82 by 2009 - net income a slightly lower % of revenue than in recent past
Interest Coverage 1.25					
Avg. 1992-2000	1.25	0.776	8.8	101.5	debt ratio improves to 0.76 by 1999 then deteriorates somewhat during construction cycle
Avg. 2001-2009	1.25	0.776	8.6	101.6	net income as a % of revenue below that of recent past
Interest Coverage 1.30					
Avg. 1992-2000	1.30	0.761	10.2	102.5	debt ratio improves to 0.74 by 1999 then is stable through the new construction cycle
Avg. 2001-2009	1.30	0.751	9.9	101.7	- net income as a % of revenue comparable to recent past - For most of the period, financial performance more favourable than what has been found prudent or necessary in the past

- 2.2.30 The draft proposed net income policy is reproduced as Appendix A3 to this Report.
- 2.2.31 Mr. Burdette, Hydro's Senior Vice-President, Finance and Services, testified on the reasons for, and nature of, Hydro's review of net income policy. He stated that the issue for Hydro was the target setting formula not the fundamental policy itself. The latter has served Hydro well over the years and is based on three factors: financial performance; the size and pattern of rate increases; and capital availability. The target setting formula is an adjunct to the basic policy. The formula has changed over time and it has become evident that the present 1.05/1.50 split interest approach will not provide sufficient net income to cover the statutory debt retirement provision in the 1990s.
- 2.2.32 Mr. Burdette noted that the proposed net income policy is consistent with the PCA and will lead to financial performance which Hydro's advisors have judged to be appropriate. It will also be consistent with government direction received in the past and will provide intergenerational equity. Further, it will keep rates as low as possible, which is consistent with the test the Minister of Energy has frequently prescribed to the OEB for the purpose of reviewing Hydro's rate proposals.
- 2.2.33 Mr. Burdette agreed that the present net income target formula was interest coverage driven, while the new formula was reserve-based. However, Hydro had no concerns in this regard because lenders will simply convert the formula to interest coverage. When the latest formula was derived, Hydro recognized that in the short-term there would be difficulty in achieving the resulting target levels of net income. This is due to the fact that Hydro will have to absorb very large front-end capital costs for plant, which although economical over the long term, were not necessarily so in the very short term.

- 2.2.34 In the past, under achievement of net income targets was due to specific decisions taken on the basis of rate considerations. Thus setting the target differently would not necessarily change the degree of achievement of net income targets. Rate smoothing would continue to be a significant consideration in the proposed new net income policy.
- 2.2.35 Mr. Burdette agreed that the proposed net income formula would lead to lower net income than desirable if load growth in the 1990s exceeded 2.5 percent. However, he stated that the basis for setting net income policy is reviewed periodically and the formula and targets are not locked in.
- 2.2.36 Hydro has taken into account the views of the principal stakeholders in arriving at the proposed net income policy and formula prescription. These include the financial community, customer groups and the Ministries of Energy and of Treasury and Economics. Mr. Burdette agreed, however, that neither AMPCO nor the MEA appeared to support the proposed net income formula.
- 2.2.37 In Mr. Burdette's view, the government of Ontario has not changed its position from that expressed in previous letters from Provincial Treasurers. Hydro had no direct indication of the position of the new government and is operating on the premise that nothing has changed in regard to net income policy since 1986, the time of the last official communication on the topic.
- 2.2.38 Mr. Burdette indicated that underpricing electricity would be counter-productive to Hydro's demand management and non-utility generation programs, but felt that the proposed formula would lead to appropriate pricing of power. Equally, he indicated that there was no inter-generational equity problem arising from lower than targeted contributions to net income over the past few years. The proposed reserve-based approach enables Hydro to deal more directly with the question of inter-

generational equity, since a prime objective of the formula is to keep the real value of the reserve growing in line with the bulk electrical system.

- 2.2.39 Mr. Burdette agreed that the proposed net income formula was equivalent to applying a 7.5 percent rate of return to the RSRC portion of the Corporation's equity, but disagreed that a market-based return on equity was applicable to Hydro. He indicated that under the proposed policy Hydro is charging customers for the capital it uses, but this does not include equity capital at market-based rates of return. Hydro is simply collecting equity capital and replacing the debt with the contributed equity. This approach does not fit with a market-based return on equity.
- 2.2.40 Mr. Burdette saw no inconsistency in including a cost of equity of 3 percent over the debt cost in Hydro's discount rate used for evaluation of capital projects and other investments, such as energy efficiency programs and non-utility generation. The higher cost attributed to the contributed capital (equity) was reflective of the source of this capital, and the higher discount rate was intended to ensure all Hydro's capital was properly deployed.
- 2.2.41 The quality of interest coverage is also used by Hydro as a measure to distinguish between the interest capitalized and the operating interest. There is a question as to how much significance should be attached to this parameter and it is likely that, in future, less reliance will be placed on this relative to gross interest coverage. Over the next decade Hydro's capital program will not be subject to as many fluctuations as in the past several years. Once the Darlington Nuclear Generating Station is in service there will be a smaller percentage of capitalized interest and that will reduce the rate impact of placing facilities in service over the outlook period.
- 2.2.42 AMPCO provided Mr. Burdette with a chart which showed interest coverage ratios for the period 1984 to 1989 and projections for the 1990s based on alternative reserve-based cases: SDR alone; SDR plus 5 percent

on the RSRC; and SDR plus 7.5 percent on the RSRC. Mr. Burdette agreed that all three formulae lead to improved financial performance compared to that of the previous six years. He noted, however, that only the approach using SDR plus 7.5 percent of the RSRC led to a level of financial performance in line with the J.P. Morgan recommendations. Furthermore, Hydro felt that this approach, by keeping the real value of the RSRC in line with system growth, provided for better intergenerational equity. The RSRC was standing at \$2.2 billion in 1989, up from \$500 million in 1980. The proposed net income policy assumes that the RSRC is at an appropriate level for today's circumstances.

- 2.2.43 Mr. Burdette stated that Hydro no longer assessed the size of the reserve relative to specific contingencies, as provided for in the PCA. To do this was complex and, in the absence of any information to the contrary, the current approach is functioning well. The resultant debt/equity ratio in the order of 80/20 has been satisfactory to the financial community and the objective is to maintain this.
- 2.2.44 Mr. Burdette agreed that the statement of policy corresponding to the proposed net income policy made no mention of specific coverage or debt/equity ratios, nor did it speak to achievement of net income targets. He also agreed that these missing elements may be a deficiency in the statement, because if the policy yielded results out of the target range, Hydro would have to consider revising it.
- 2.2.45 Mr. Burdette agreed that one approach to net income was to extend the notion applied to the RSRC to the whole of Hydro's equity including the SDR. To do so would be a simple calculation that would achieve almost exactly the same result as the proposed policy and formulation, under which the SDR Amount is treated as a separate variable, in terms of financial results and rate impacts. Application of an interest factor to the whole of Hydro's equity would be simpler and probably fairer for a public power company.

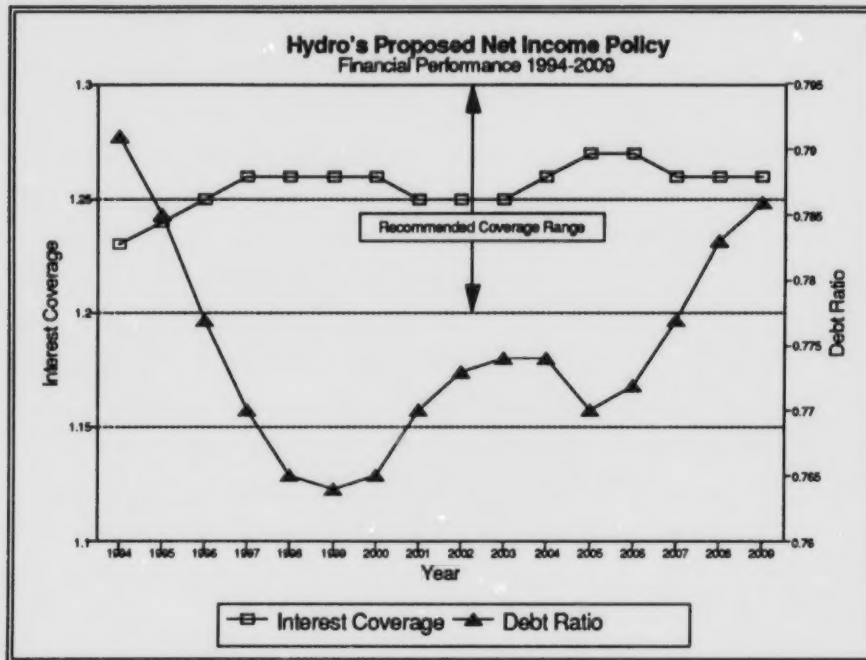
- 2.2.46 Mr. Burdette disagreed that the power at cost principle, as a historical concept, was merely a useful slogan that suggests efficiency and a serious approach by Hydro, or that it may be interfering with communication regarding serious technical questions. He characterized the current approach as "cost plus something" and ventured that if power at a cost did not include contributions to equity, debt would have to substitute for net income additions, thereby requiring higher rates to cover the resulting interest costs.
- 2.2.47 Hydro has not undertaken a comprehensive review of the net income provisions of the PCA in recent years. Specifically it has not reviewed the mandatory SDR Amount (sections 16 and 75c) and the discretionary provisions of sections 13(1) and 15(1). Mr. Burdette concluded that those responsible for the 1989 PCA review were satisfied with these provisions, since they were not changed. In any event, since the SDR Amount was statutory, it should be up to the government to review this. There was no longer any specific self-insurance provision as provided for in section 13(1)(b) of the PCA. Mr. Burdette contended, however, that the RSRC still had the capability to deal with contingencies as envisioned in section 13.
- 2.2.48 Mr. Burdette agreed that under its current net income policy, Hydro could, in the past, have charged interest on the reserve. Under the new policy, interest will now be charged and must be included as a cost of power in rates. Mr. Burdette was unsure whether mandatory annual costs such as the SDR Amount and the interest on the RSRC should be shown as "Costs" on Hydro's income statement (Statement of Operations), rather than as net income. There is a corresponding issue of the presentation of the accumulated provisions on the Balance Sheet as "equity" rather than "net assets minus liabilities".
- 2.2.49 Hydro provided some examples of rate smoothing approaches in the implementation of the new net income policy. These showed that to avoid

rate shock there would need to be a phase-in of 3 to 5 years, depending on the forecast level of the basic rate increase.

Financial Performance Under Hydro's Proposed Net Income Policy

- 2.2.50 For the review of net income policy Hydro provided a base financial forecast to its consultant. This was prepared using Hydro's long range financial model with input assumptions corresponding to the preferred option of the Demand/Supply Plan. The economic outlook was approved in September 1988 and the Load Forecast in December 1988 (LF 88 12 12). Hydro noted that the long-term financial forecast developed for the net income review is currently being updated as part of the 1990 Business Planning process, and that this update will likely show higher capital expenditures, electricity rates and borrowing levels than those underlying the net income policy review. Hydro stated these changes were not expected to fundamentally alter the evaluation of policy options as shown in its filings.
- 2.2.51 Hydro's latest short-term financial forecast and the projections provided in support of the net income policy are not consistent for the period 1990 to 1993. Based on the May 1990 Update, much higher operating costs and borrowing requirements resulting in lower net income are predicted for this period than in the long-term projections which support the net income study. Also, Hydro indicated it would smooth the rate increases associated with the new net income policy in the period 1992 to 1995.
- 2.2.52 Figure 2.2 shows Hydro's projections for the period 1994-2009 assuming the full implementation of the proposed net income policy (no phase-in) under a scenario which assumes implementation of the preferred plan of the DSP. Interest coverage averages 1.25 for the period and the debt-ratio decreases to about the year 1999 and then increases to 2009.

Figure 2.2: Projected Long-term Financial Performance under Hydro's Proposed Net Income Policy



Source: Exhibits 9.3A and 9.4.21

Positions of the Parties

Hydro

2.2.53

Hydro submitted that its proposed net income policy is appropriate in part because it includes a net income target based on the reserves established pursuant to the PCA. Intergenerational equity is also addressed, since the value of the RSRC contributed by one generation of customers is not diluted to the benefit of future generations. Simulations show a projected level of interest coverage within the range recommended by J.P. Morgan, as well as satisfactory performance of other financial indicators, including the debt ratio and cash flow coverage ratio.

AMPCO

- 2.2.54 AMPCO submitted that the PCA establishes a minimum net income level through the SDR Provision. This must be accepted as given, unless one is prepared to open the debate about whether or not the terms for the SDR set out in the PCA are an anachronism and ought to be changed. While such a debate may be overdue, AMPCO acknowledges the need to meet the SDR Amount. The only remaining issue is therefore the need for, and size of, the RSRC.
- 2.2.55 AMPCO submitted that Hydro's proposed reserve-based approach, in which the RSRC will grow at 7.5 percent per year, is purely arbitrary and is not an acceptable basis for determining the appropriate size of the RSRC. The proposed net income formula was selected because it corresponds most closely to the J.P. Morgan guideline for the interest coverage ratio. In fact, net income set at the SDR Amount alone would result in an interest coverage ratio of just below 1.20 and a debt ratio of less than 82 percent until 2007, well below J.P. Morgan's acceptable limit of 85 percent. There is no evidence to suggest that this level of financial performance, combined with the debt guarantee, would not be sufficient to provide Hydro with access to credit at acceptable rates.
- 2.2.56 AMPCO submitted that Hydro has chosen its net income policy option solely because of the resulting financial performance ratios. If this is the true criterion, it questioned why it was not used directly. In this regard, AMPCO agreed with the MEA's position and recommended that financial ratios be used directly as a basis for net income policy.

The MEA

- 2.2.57 The MEA submitted that Hydro's reserve-based approach should be rejected, since such approaches are not understandable to the financial community and require prediction of long-term levels of inflation and load

growth which, if one judges by the experience of the last two decades, are inherently difficult to predict.

2.2.58 The appropriate size of the RSRC has not been established and it may not be possible to determine this. Hydro considers the present size of the reserve appropriate only because the investment community appears to have been satisfied with the resulting debt/equity ratio.

2.2.59 The MEA submitted that a policy directly based on the relevant financial indicators, i.e. interest coverage and debt/equity ratio, is more likely to achieve satisfactory levels of these indicators. The MEA expressed the view that Hydro has been consistently delaying the achievement of financial soundness. It submitted that it is imperative that Hydro's net income policy directly achieve the required financial performance results and not permit postponement of these results.

Board Staff

2.2.60 Board Staff submitted that Hydro's proposed reserve-based approach was a step in the right direction, since it assigns a rate of interest to the RSRC portion of Hydro's equity and ensures no real decline in the RSRC. However the approach does not go far enough, because it does not require a market-based return on equity, and the 7.5 percent interest rate applies only to the RSRC and not to the accumulated SDR Amounts. It estimated that applying Hydro's reserve-based formula to current equity levels would result in a return on equity of about 9.3 percent.

2.2.61 Board Staff noted that implementation of the capital program set out in the DSP would require borrowing \$60 billion over the next 25 years. Even with no real decline in the RSRC, the debt/equity ratio will increase, since the SDR carries only a 4 percent interest rate and chases a receding target as debt constantly increases. This increasing debt/equity ratio will

adversely affect Hydro's future financial soundness, with an accompanying higher likelihood of increased costs for debt capital.

Hydro Reply

- 2.2.62 Hydro in reply disagreed with both the MEA and AMPCO submissions that the reserve-based approach should be superseded by direct pursuit of appropriate levels of financial performance. It stated that the current level of the RSRC has met Hydro's needs and satisfied the financial community. There is therefore no evidence to support the contention of the MEA and AMPCO that the current value of the RSRC lacks substantiation.
- 2.2.63 Financial performance indicators were an important consideration for Hydro in developing its proposed policy. If the proposed policy later proves to be less satisfactory against relevant indicators, this would be a signal to revise it. While an interest coverage target mechanism could be used to provide guidance within a policy, the development of the overall net income policy must take into account several additional factors. Hydro submitted that its recommended target mechanism focuses more directly on the balance of the various relevant factors which net income is intended to address. Hydro's approach allows for the evaluation of a number of indicators, including the debt/equity ratio, and is therefore superior, even by the MEA's own measure, to a simple interest coverage approach.

REPORT OF THE BOARD

3. ALTERNATIVES TO HYDRO'S PROPOSED NET INCOME POLICY

Two basic alternatives to Hydro's proposed net income policy were presented by the Municipal Electrical Association and by Board Staff. These were respectively net income based on fixed interest coverage of 1.30 to 1.40 times and net income based on a market-based return on equity. Hydro and the Association of Major Power Consumers in Ontario entered reply evidence to the market-based return on equity approach proposed by Board Staff. This Chapter summarizes the evidence and the positions of the parties on these two alternative net income policies.

3.1 NET INCOME BASED ON INTEREST COVERAGE OF 1.30 TO 1.40

3.1.1 The MEA retained the services of National Economic Research Associates Inc. ("NERA"). Mr. M. Luftig, Vice-President of NERA, presented evidence on a proposed net income policy based directly on achieving fixed interest coverage in the range of 1.30 to 1.40, as opposed to Hydro's proposed PCA reserve-based approach.

3.1.2 NERA undertook a study which reviewed the Hydro and J. P. Morgan reports from the perspective of the financial integrity of Hydro. The

NERA study noted that financial integrity was important in order to ensure that:

Hydro has adequate access to capital markets at the lowest possible cost; and that Hydro remains a self-supporting utility that does not impinge on government resources and does not affect the good credit rating presently enjoyed by the Province of Ontario.

- 3.1.3 The NERA study agreed with that of J. P. Morgan to a significant degree, but differed on the way in which forecasting uncertainties and risk considerations affected net income policy and formulation of targets.
- 3.1.4 The NERA study recommended that Hydro's net income policy should be based on interest coverage and debt ratio targets. It noted that there is a lack of understanding by the investment community of the current net income policy and that Hydro has to translate its reserve-based net income policy into interest coverage and debt ratios. The most meaningful financial measure for participants in the capital markets is interest coverage, which is highlighted in utility bond prospectuses and is the focus of the U.S. Securities and Exchange Commission's assessment of bond issues.
- 3.1.5 The NERA study also noted that for Canadian provincial electric utilities, it is the guarantee of the utilities' debt, not the financial condition of the utilities, which earns the highest debt ratings. Hydro's average interest coverage and debt ratios for 1988 were 1.23 and 82.9 percent respectively, which, based on Standard and Poors' rating system, would lead to a BB rating at best. For an AA rating, interest coverage of 3.5 and a debt ratio of 46 percent are required for U.S. electric utilities which operate on a stand-alone basis.
- 3.1.6 With regard to Hydro's proposed reserve-based approach, the NERA study noted that the investment community is not familiar with reserve-based approaches. It also noted that Hydro's proposed approach does not

necessarily achieve levels of net income that meet both principal and interest payment requirements. If a target based on the PCA is necessary, Hydro could impose the additional test that net income must at least equal the SDR Amount. Hydro's projections show that its proposed policy fails to achieve the upper bound of J. P. Morgan's recommended level of interest coverage (1.30) at any time in the forecast period 1994 to 2019.

- 3.1.7 Given the uncertainties in Hydro's load and financial forecasts and externalities (eg. environmental problems), which will pose increased risks in the 1990's, and Hydro's history of underachievement of net income targets, the NERA study recommended that interest coverage be targeted in the range of 1.30 to 1.40, rather than 1.20 to 1.30 as recommended by J. P. Morgan. As a double check, non-cash capitalized interest should be excluded from calculation of interest coverage. This calculation should lead to coverage of at least one.
- 3.1.8 The NERA study recommended against the debt ratio being the primary measure of financial performance, since for a crown corporation such as Hydro, which has no ability to raise equity through stock issues, this was not an appropriate measure. However, a sound interest coverage approach would lead to higher levels of retained earnings, which would improve the debt ratio. This was deemed to be prudent, given the size of Hydro's planned capital program and associated borrowing requirements.
- 3.1.9 The NERA study recommended rate smoothing be used to avoid undue rate shock in a transition to the recommended net income policy. However, for 1991 Hydro should ensure an interest coverage of 1.20 at a minimum.
- 3.1.10 Mr. Luftig testified that it was important for Hydro to become financially stronger for reasons other than the risks associated with load growth and environmental externalities. In particular, an economic recession would put pressures on the provincial economy, and mean that Hydro should seek

higher levels of financial performance to avoid putting pressure on the province's debt rating. If the province was financing large deficits at the same time that Hydro needed large amounts of capital, there could be a review and re-rating of the triple A status. The cost of downgrading the combined \$60 billion debt of Hydro and the province would be significant.

- 3.1.11 Mr. Luftig expressed the view that at present investors are confident with Hydro, despite recent trends to weaker financial performance, and that higher coverage ratios would not be necessary if Hydro was not planning to go out and raise capital for a large construction program over the next few years.
- 3.1.12 Mr. Luftig stated that his principal reasons for advocating a higher interest coverage ratio than J.P. Morgan were related to the increased risks Hydro was facing in the 1990s and the need to ensure a safety margin so that Hydro's interest coverage did not fall to the 1.0 to 1.1 range, as it currently had. The risks are primarily related to Hydro's proposed large construction program and the potential for mis-forecasting the related capital budget. Hydro has not demonstrated accuracy in its forecasts in the past. The failure to segregate reserves for nuclear decommissioning was another source of risk. If decommissioning costs were significantly underestimated, the additional borrowing could require raising capital to decommission plants at the same time that capital was being raised to build new plants.
- 3.1.13 Mr. Luftig noted that despite Hydro's ability to set its own rates and recover cost increases, the present net income and financial performance targets had not been met. Mr. Luftig concluded that "either the targets are phoney or they don't have the ability to fix rates correctly".
- 3.1.14 Mr. Luftig also saw risks associated with private power. If Hydro's customers could generate their own power more cheaply than buying from Hydro, there was a risk that the utility would not be able to recover all of

its costs in rates. Standard and Poors had noted this risk recently in the general context of Canadian utilities.

- 3.1.15 Hydro provided charts which indicated that its capital expenditures per kW of primary peak load would decline from \$112 to \$90 over the period 1980 to 2000 (constant 1980 dollars). Currently the figure is \$98/peak kW of capacity. Mr. Luftig pointed out that although these show that while capital intensity is decreasing, the actual capital program was one of increasing expenditures even in constant dollar terms.
- 3.1.16 Hydro's charts also projected future net borrowings but indicated that the net amount of Hydro's borrowing in constant dollar terms would be lower in the 1990s than in the 1980s. Mr. Luftig noted that this was comparing a forecast amount to an actual amount and there were therefore uncertainties in the projection.
- 3.1.17 Mr. Luftig did not support a return on equity approach to net income policy. He pointed out that under such an approach, the return on equity was maintained even when an adequate debt/equity ratio was reached. A further problem is that small changes in net income would bring about significant fluctuations in the return on equity. The return on equity approach could therefore lead to an illusion of a financially unstable utility when the utility was in fact stable. Under an interest coverage approach equity would grow, except in periods of very high interest rates, and as it did so, the return on equity would decrease. This would also dampen the effect of changes in net income.

Positions of the Parties

AMPCO

- 3.1.18 AMPCO submitted that setting net income to meet the financial ratios required by the financial markets meets two practical goals: ensuring

access to debt markets; and maintaining Hydro's financial self-sufficiency. AMPCO submitted that the experience of the 1980s has established that an interest coverage ratio in the range 1.10-1.20 and a debt ratio of no more than 85 percent will adequately meet the needs of investors and ensure financial self-sufficiency.

- 3.1.19 Hydro's financial performance in the 1980s has compared favourably with other power utilities in Canada. Increases in the interest coverage ratio have been most dramatic for Hydro, followed by New Brunswick Electric Power and British Columbia Hydro. Manitoba Hydro has seen its coverage ratio decline over the period. With the exception of Manitoba, all the aforementioned utilities have experienced a gradual decline in their debt ratio. Hydro's debt ratio was lower than the others at the beginning of the period, with the result that the decline was less rapid than the other utilities. In 1989 Hydro's debt ratio compared favourably with other Canadian utilities.
- 3.1.20 AMPCO submitted that the J.P. Morgan study, provides useful insights into the way Hydro debt is viewed by the financial markets. AMPCO contended, however, that the study contained conflicting statements which, on the one hand, indicate that Hydro debt issues enjoy wide acceptance in all markets due to the existence of the provincial guarantee and, on the other hand, still advocate a higher level of interest coverage.
- 3.1.21 AMPCO submitted that as long as the provincial guarantee exists and Hydro's financial ratios remain in their present range, the market appears quite content to rate Ontario Hydro AAA. It therefore requested that the Board recommend that Hydro establish a net income policy which has as its target the maintenance of an interest coverage ratio in the range 1.10 to 1.20 and a debt ratio of no more than 85 percent.

The MEA

- 3.1.22 The MEA submitted that Hydro's net income policy should be set on the basis of a target range of 1.30 to 1.40 times interest coverage. Accordingly, the MEA recommended that the J.P. Morgan proposal be rejected.
- 3.1.23 The MEA submitted that the interest coverage range of 1.20 to 1.30 recommended by J.P. Morgan was arrived at prior to events which have increased uncertainty, namely the failure of the Meech Lake Accord and the Persian Gulf crisis. It noted that Hydro had also recently made a significant revision to its long range forecasts.
- 3.1.24 The MEA stated that its proposal for interest coverage in the range of 1.30 to 1.40 would not materially increase the real price of electricity compared to Hydro's proposal and that this level was desirable to improve financial soundness before Hydro embarked on major future capital expenditure programs.
- 3.1.25 The MEA submitted that stakeholders' views on Hydro's net income policy are important and urged the Board to give considerable weight to the MEA's views and preferences, since Hydro was established to supply power to Ontario municipalities at cost, not as a "for profit" corporation.

Board Staff

- 3.1.26 Board Staff submitted that for financial self reliance to be achieved, Hydro must act as if it did not have the provincial debt guarantee. If Hydro's projected heavy debt load is not to have a negative impact on the provincial credit rating, true financial self-sufficiency is necessary to insulate against this possibility. The interest coverage net income policy proposed by the MEA, although a step in the right direction, is not by itself sufficient for Hydro to achieve a financially strong position.

Furthermore, the MEA proposal does not address the issue of economic efficiency in addition to financial soundness.

Hydro

- 3.1.27 Hydro submitted that in proposing an interest coverage range of 1.30 to 1.40, the MEA has ignored the opinion of its own expert, who agreed that coverage of 1.25 was sufficient for Hydro to continue to access debt markets at competitive rates. Coverage of 1.25 is consistent with the application of Hydro's proposed net income policy and is the mid-point of the range recommended by J.P. Morgan.

3.2 MARKET-BASED RETURN ON EQUITY

- 3.2.1 Board Staff retained the services of Dr. V. Andrews, Professor, Department of Finance, College of Business Administration, Georgia State University. Dr. Andrews examined Hydro's proposed net income policy and the advisability of an alternative approach using a market-based return on equity.
- 3.2.2 Dr. Andrews' report focused heavily on economic efficiency considerations and the economic and financial effects of uncertainty.
- 3.2.3 Dr. Andrews' report noted several anomalies in Hydro's net income policy:
- Cash flow from depreciation expense is used to finance fixed assets; therefore it is not available to meet interest expense and the cash flow coverage ratio is misrepresented.
 - The absence of a sinking fund is not significant. However, the purpose of the SDR Amount - for the retirement of debt - will never be achieved because of rapidly and indefinitely expanding debt.

- Equity cost is not included in revenue requirements; therefore if operating costs exceed budget, because of the absence of a planned cushion of returns to equity, there is therefore almost direct exposure of interest coverage to revenue shortfalls or operating cost increases.

- 3.2.4 Dr. Andrews' report noted that, other than the SDR Amount, equity contributions at present are residual, rather than planned. In this respect, Hydro's proposed policy is a step in the right direction, since a return on the RSRC is now planned, with the result that a return on equity would be incorporated into net income. The major problem is that an appropriate cost of equity corresponding to market rates is not contemplated in the proposed policy.
- 3.2.5 Dr. Andrews contended that, if market-based returns on equity are not included in the revenue requirement, the price of electric power will not properly reflect the cost of equity, which will result in an inappropriate allocation of economic resources and a loss of economic efficiency. Dr. Andrews noted similar evidence had been provided by Dr. Jenkins in H.R. 16 about the distortions introduced indirectly by Hydro's "subsidized costs".
- 3.2.6 Dr. Andrews' report noted that the effect of the implementation of time-of-use rates would be somewhat blunted by their relationship to a revenue base that does not reflect full capital costs.
- 3.2.7 Dr. Andrews' report suggested that Hydro placed too much reliance on debt and that the Corporation's financial structure was too heavily leveraged. The impacts of Hydro's May 28, 1990 Update on net income, and the interest coverage and debt ratios for 1991 were very marked. In addition, Hydro plans to borrow \$900 million more than forecast in that year.
- 3.2.8 Hydro's borrowing requirements over the next two decades are very large based on current forecasts of financing requirements for its capital

program. Unless a fundamental change is made in net income policy, which will provide a higher proportion of internally generated funds, Hydro will have to rely on debt markets alone for this capital.

- 3.2.9 Dr. Andrews acknowledged that Hydro's proposed net income policy was a significant step in the right direction. However, this policy would lead to returns on equity at below debt cost, rather than at market rates and, in addition, would not ensure sufficient equity to rebalance Hydro's top-heavy capital structure. Implementation of a market-based return on equity approach to net income would ensure financial soundness, and appropriately priced electricity, thereby avoiding economic distortions.
- 3.2.10 To avoid rate shock associated with moving to a market-based return on equity, Dr. Andrews presented several smoothing formulae which would allow for a transition over 10 years to achieve the dual goals of a market-based return on equity and an improved debt/equity ratio. Although Dr. Andrews did not undertake an analysis of either an appropriate rate of return or an appropriate debt ratio, he used 14 percent and 75 percent respectively in these simulations.
- 3.2.11 Dr. Andrews expressed misgivings about interest coverage alone as a financial measure. This measure should be considered as part of a family of measures, which include cash flow coverage and quality of interest coverage. Hydro's cash flow coverage ratios had not been at adequate levels in recent years and, in any event, depreciation expense was included in the cash flow coverage ratio. In a firm with a rapidly growing asset base, depreciation expense is reinvested and recommitted to assets and is therefore not available for debt service purposes. If depreciation expense is excluded from cash flow coverage, the ratio would be much lower.
- 3.2.12 Dr. Andrews reiterated his position that corporations should strive for a planned accumulation of equity. The SDR Amount and RSC Provision lead to uncertainty in this regard, and although the combined SDR fund

and RSRC had grown from about \$0.5 to \$2.2 billion over the past fifteen years, Hydro's debt/equity ratio had increased from 75 percent in the mid-1970s to over 80 percent currently. Public power corporations such as TVA and Hydro Quebec manage to maintain a 25 percent equity ratio and this is a desirable objective for Hydro.

- 3.2.13 Dr. Andrews was questioned by Counsel to the MEA whether the notion of cost included only direct costs and not financial costs, such as profit or return on equity. Dr. Andrews' position was that cost could be derived on either basis, depending on the context and circumstances.
- 3.2.14 Dr. Andrews agreed with Counsel to AMPCO that an appropriate interest coverage-based net income policy could lead to an appropriate debt/equity ratio. Dr. Andrews also indicated that if Hydro reached an appropriate debt/equity ratio, of say 75/25, he would advocate that Hydro pay a dividend to the province from any excess funds. This is similar to a provision between Hydro Quebec and the government of Quebec.
- 3.2.15 Dr. Andrews noted Hydro's evidence that it used a notional cost of equity of 3 percent above debt cost in evaluating capital investment decisions. He stated that he did not understand how Hydro could include equity returns in its cost of capital for capital budget decisions, but not include this cost of equity in the revenue requirement and rates.
- 3.2.16 Dr. Andrews also stated that the failure to include a market equivalent cost of equity in the rates charged for electricity would, to some degree, skew energy decisions by consumers towards electricity, thereby making these decisions non market-based. If electricity prices do not reflect the full cost of capital, then the effect of pricing on electricity conservation has to be prejudiced. Equally, avoided costs, which form the basis of decisions on demand management programs, must be understated and pricing of non-utility power purchases must be skewed or imbalanced.

- 3.2.17 Dr. Andrews agreed with Counsel to AMPCO that it was not necessary for Hydro to have a market-based return on equity as part of its net income policy in order to access debt markets for its capital requirements. However, he qualified this by pointing out that this is because Hydro can set its own rates at whatever level is necessary to ensure access to debt markets and it also has the provincial guarantee which, in a sense, is a form of shadow equity, in that it provides a buffer against debt holder risk.
- 3.2.18 Dr. Andrews stated that it is important for Hydro to have equity to absorb year-to-year variations in income, which thereby cushions what goes on with respect to prior claims. However, he expressed the view that it was better to explicitly pursue a debt/equity goal, which would lead to improved interest coverage ratios, rather than the other way around. The pursuit of policeable goals, such as the debt/equity ratio, would lead to improvements in interest coverage, but pursuing interest coverage would only by coincidence produce improved debt/equity ratios.
- 3.2.19 Dr. Andrews indicated that one problem resulting from failing to recover the full cost of capital in Hydro's revenue requirement was that electricity was under-priced, and accordingly large industrial users of electricity, particularly exporters of electricity intensive products, are subsidized. Dr. Andrews could not say whether this resulted in a net economic loss or gain to the provincial economy.
- 3.2.20 Dr. Andrews was adamant that only the pursuit of the dual goals of market-based return on equity and an appropriate debt/equity ratio would ensure financial integrity for Hydro in the future. The provincial guarantee for the moment removes the question of the marketability of Hydro's debt issues. However Hydro's very large projected borrowing requirements make it imperative that the Corporation pursue equity-based financial goals. He disagreed with recent papers that suggested that all regulated utilities should be 100 percent debt-financed.

3.2.21 Dr. Andrews maintained that it is possible to have efficient capital markets in the presence of taxation and that although taxes influence the market, they do not cause imperfections or distortions. In addition, public policy considerations should not exclude economic efficiency as an important factor. However he acknowledged that public policy choices are made in the pursuit of other goals which do not lead to economic efficiency.

3.2.22 Dr. Andrews outlined various approaches which could be used to determine the appropriate rate of return on equity for Hydro, but indicated he had not assessed which of these would lead to an appropriate determination. He stated that Hydro's proposed approach of targeting net income equal to the SDR plus 7.5 percent interest on the RSRC would yield returns to equity of between 10 and 11 percent, which is equivalent to the embedded cost of debt.

Ontario Hydro Reply Evidence

3.2.23 Ontario Hydro retained Dr. Robert Lind, Professor of Economics, Management and Public Policy, Cornell University, to respond to Dr. Andrews' proposal for a net income policy based on a market-based return on equity.

3.2.24 Dr. Lind had four main criticisms of Dr. Andrews' proposal:

- The economic efficiency arguments are based on perfectly functioning capital markets which do not occur in practice due to distortions created by corporate and personal income tax and other factors.
- There is no optimal capital structure for either public or private firms and it is not well understood either how firms determine their capital structure, or which criteria should apply.
- Hydro is a public power corporation and differs markedly from a private power corporation in its objectives, in the way in which it raises capital and in who bears the risks.

- The ratepayers and shareholders of Hydro are one and the same. The ratepayers have contributed the equity and the ratepayers take all of the risks associated with the utility in the form of either or both increased rates or a reduction in contributed reserves (equity).

3.2.25 Dr. Lind stated that the notion of a perfectly competitive model, which produces efficient results is a useful starting point for analysis. However, it is inappropriate to jump from the perfectly competitive model to private markets as seen in reality. Private markets contain many imperfections, which make it impossible to judge anything in respect of economic efficiency using these markets as an ideal. It is also inappropriate to postulate that public enterprises should use private rates of return or that they should necessarily behave and make decisions which mirror private firms, since their circumstances are quite different.

3.2.26 In Dr. Lind's opinion, there is no such thing as an optimal capital structure, and even similar firms often have very different capital structures. One cannot say therefore that private firms produce the right capital asset mix or, on the other hand, that Hydro has the wrong capital asset mix or debt/equity ratio.

3.2.27 Dr. Lind contended that when analyzing risks and pricing, it is very important to look at who contributes most of the equity capital and who bears the residual risk of the Corporation. Dr. Lind stated that it was the ratepayers who contributed most of the equity and who bore the residual risk through the potential for higher rates under adverse financial circumstances. The provincial debt guarantee was the final backstop to be used only if rates could not be raised enough. These factors mitigate against the use of a market-based rate of return on equity in Hydro's net income policy.

3.2.28 In the case of Hydro, there is a contribution from ratepayers to equity capital, which is not the case for an investor-owned utility. In addition, the residual risks associated with, for example, failure of a nuclear plant

are passed right on to the ratepayers. Again, this is not the case for an investor-owned utility, where the regulatory agency would ensure such risks were borne by the shareholders, not the ratepayers. Dr. Lind concluded that these differences mean that the ratepayers of Ontario Hydro are not being subsidized by Hydro failing to charge a market-based return on equity in its rates. He acknowledged that in an investor-owned utility, a longer-term effect of capital losses sustained by shareholders would be a higher cost of equity capital and hence higher rates. In this respect, the ratepayers also share some of the risk of a private utility.

3.2.29 Dr. Lind disagreed that if Hydro charged a market-based return on equity, this would lead to greater efficiency. Investor-owned utilities must charge a return on equity in order to sell shares in equity markets. Hydro raises its capital in the debt markets and its equity capital is contributed as additions to reserves by the ratepayers. It is not possible to say that this is a less efficient way to organize the raising of capital and the production of power. In fact there are real advantages to Hydro's situation, since it avoids the contentious issue of trying to determine the appropriate rate of return on equity capital.

3.2.30 Dr. Lind noted that Hydro provides for a notional cost of equity capital in determining the discount rate for its evaluation of capital projects. This in his view is appropriate, since this opportunity cost is intended to ensure that the contributed equity capital is used as efficiently as it could be elsewhere in the economy. Dr. Lind could not comment on whether the specific rate of three percent above the average cost of debt was appropriate. He disagreed with Counsel to Board Staff that it was anomalous to use a return on equity in the cost of capital for capital budgeting decisions, but not to charge this in rates. The essential point was that Hydro does not actually have to collect this return on equity and put it into retained earnings and dividends as would an investor-owned utility.

- 3.2.31 Dr. Lind did not agree that Hydro's equity is equivalent to retained earnings in a private firm. The shareholders in a private firm own the equity and net income and make a decision whether to receive all of the net income as dividends or reinvest part of this in the firm as retained earnings. Tax considerations are important to this decision. In the case of Hydro the net income or profit is also contributed by the ratepayers, as would be the case in a private utility. However, in Hydro's case, all net income is contributed capital which is reinvested in the Corporation and accordingly there is therefore no distinction between net income and retained earnings.
- 3.2.32 Dr. Lind dismissed as inappropriate Dr. Andrews' view that Hydro should charge ratepayers a return on equity and then pay dividends to the province. He likened such an approach to disguising a tax on electricity as a return on equity and argued that it would be better, if the province wished to raise revenues, to put a tax directly on electricity. Dr. Lind argued that as currently organized, Hydro has many of the attributes of a cooperative. The ratepayers receive the benefits of their equity contributions through reliable electricity supply and competitively priced power rates which do not include a market-based return on equity as in the case of a private investor owned utility.
- 3.2.33 In Dr. Lind's view it was unreasonable to conclude that a failure to charge a market-based return on equity is evidence of the ratepayers being subsidized. However, he noted that he had not analyzed Hydro rates and so could not say there were no aspects of subsidy which derived from other factors in electricity rates. There were also public policy considerations which bore on the issue of subsidy.
- 3.2.34 Dr. Lind stated that constraining the growth of Hydro's debt was not a sufficient reason to include a market-based rate of return on equity in its net income policy. If the debt grows along with the assets in service, the size of the debt should not be of concern. In any event, charging market-

based returns on equity to build up the equity base was a "back door" way of achieving this. A more direct way would be to raise prices to increase interest coverage and hence the equity reserves of the corporation.

3.2.35 Dr. Lind stated that it is important for Hydro to be financially sound to avoid any pressure on the provincial debt rating. He indicated that in his view, there was no prospect of capital availability problems affecting Hydro's ability to raise debt capital. Hydro's investment plans over the next 20 years indicate that its capital needs, expressed as a percentage of the Canadian gross domestic product, are lower than in the 1970s. The overall demand for capital will determine interest rates, but Hydro should have no difficulty borrowing at market rates, as long as it remains financially healthy.

3.2.36 Dr. Lind disagreed with Dr. Andrews' view that marginal cost pricing was necessary to increase economic efficiency and pointed out that no utilities were pricing power on a total marginal cost basis. Rather, the proper approach was towards marginal variable cost pricing. Rate structures were another way to increase economic efficiency by, for example, charging increasing prices for successive blocks of power.

3.2.37 Dr. Lind stated that his objectives for Hydro's net income policy included financial soundness, the ability to smooth rates and meet contingencies, and intergenerational equity. Public policy objectives and appropriate pricing of electricity were further considerations, which did not necessarily directly affect net income policy and could be achieved through other means, such as rate structures.

AMPCO Reply Evidence

3.2.38 AMPCO called a panel of Senior Executives from three of the major industrial power consuming companies in Ontario:

Linn Macdonald, Senior Executive Vice-President, Abitibi Price Inc.;
Roy Aitken, Executive Vice-President, Inco Limited; and
Ian Young, Senior Vice-President & Chief Financial Officer, ICI Canada.

- 3.2.39 The thrust of AMPCO's evidence was that a change from Hydro's current power at cost approach to a market-based return on equity would have the following effects:
- create uncertainty in regard to the level of future rates;
 - raise the expectation that significant rate increases will result; and
 - raise concerns that through dividend payments, Hydro could become an additional source of revenue to satisfy provincial needs.
- 3.2.40 AMPCO stated that Hydro since its creation in 1906, has played an important role in the economic development and industrial structure of Ontario, which constitutes the core of the Canadian economy. The principle of power at cost, as interpreted by Hydro in its net income policy, has served Ontario well to date and should not be altered without overwhelming proof that an alternative approach would be superior.
- 3.2.41 AMPCO noted that the liberalization of trade under GATT and the Canada/U.S. Free Trade Agreement has exposed Canadian and Ontario industry to an intensely competitive environment in which cost control has become critical to success. This implies not only efficient manufacturing operations, but the ability to anticipate changes in important elements of industry's cost structure.
- 3.2.42 Electricity costs play a key role in the cost structure of a considerable part of Ontario's industrial core, especially in mining, primary metals, wood, paper products and chemicals. According to AMPCO, electricity comprises between seven and seventy percent of the variable costs in these sectors. The electricity component of variable costs has increased in

percentage terms for many of these industries in the 1980s, thereby making them more vulnerable competitively to further changes in power costs.

- 3.2.43 According to AMPCO, power costs for large industry in Ontario are the third highest in Canada, averaging 3.92¢/kWh in 1989. These costs have increased by an average of 6.5 percent per year over the period 1983 to 1989. Several industries are already being adversely affected by this escalation of electricity rates in the 1980s. If the inclusion of market-based returns on equity further escalates rates, this situation would be exacerbated.
- 3.2.44 AMPCO adamantly opposed the proposal of Board Staff for a net income policy based on a market-based return on equity. It noted that the economic experts disagree fundamentally on the issues of economic efficiency and expressed serious doubts about the claimed benefits that would flow from the adoption of a market-based return on equity approach.
- 3.2.45 According to AMPCO, the abandonment of the traditional power at cost approach to net income policy would have serious impacts on Ontario industry. It noted that, as currently projected, with the demands for a greater degree of environmental awareness, it was unlikely that power cost escalations will be lower in the 1990s than the 1980s.
- 3.2.46 AMPCO concluded that Hydro's current interpretation of power at cost in relation to net income was consistent with the needs of Ontario industry, and that the current approach should not be abandoned in the absence of compelling evidence of the identifiable benefits from doing so. No such benefits have been identified. A market-based return on equity approach to net income would result in higher rate increases and increased uncertainty about future power costs and send a message that the province is no longer eager for its industry to compete in the world marketplace.

- 3.2.47 When questioned about why predictability of power rates was so important, AMPCO's witnesses cited the fact that their industries were both capital intensive and electricity intensive. When making capital expansion decisions, the predictability of future electricity costs was very important. They disagreed that Hydro's proposed net income policy based on inflation and system growth would lead to rates which were as uncertain as those resulting from a market-based return on equity approach. Dealing with inflation was a matter that industry was used to when making decisions about capital investment and production operations.
- 3.2.48 AMPCO's witnesses disagreed with Counsel to Board Staff that for Hydro not to charge a market-based return on equity was evidence that it was not recovering all of its costs. They contended that all of Hydro's costs, including those associated with its debt financing at market rates, were recovered in rates. Since Hydro is not statutorily required to charge a return on equity, this type of return cannot be considered a cost.
- 3.2.49 AMPCO's witnesses also stated that, even if the net income policy based on a market-based return on equity was phased in, it would still have adverse longer-term impacts, in that at the end of the day industry would still be paying higher power rates. There was no obvious benefit to such a policy and the experts disagreed on the fundamentals of such a policy. AMPCO supported full cost recovery by Hydro, but argued that this did not include charging a market-based return on equity.
- 3.2.50 AMPCO's witnesses reiterated that power rates to industrial customers in Ontario are no longer low compared to other provinces and some parts of the U.S.A. For example Abitibi Price is paying 3.83 cents per kWh in Thunder Bay and 3.03 cents per kWh in Alabama.
- 3.2.51 In conclusion, AMPCO's witnesses argued for continuation of power at cost as determined by Ontario Hydro. They accepted that cost included costs related to maintaining financial soundness, but stated that the creation

of equity in an artificial sense to arrive at a commercial type of debt/equity ratio was not appropriate. The citizens of Ontario guarantee Hydro's debt and so a particular debt/equity ratio should not be part of Hydro's net income policy. The provision of reserves for contingencies and coverage of interest and principle on the debt were felt to be appropriate and should remain the basis of Hydro's net income policy.

Positions of the Parties

AMPCO

- 3.2.52 AMPCO submitted that the proposal to deal with the RSRC through a market-based return on equity, in order to improve economic efficiency, has no valid basis in economic theory and could result in unjustified and injurious electricity rate increases.
- 3.2.53 AMPCO submitted that the theory of perfectly competitive markets used by Dr. Andrews was a simplification. The real world was much more complex, with countless departures from the idealized model. A more pragmatic approach is required which recognizes the realities of the context in which the policy is being developed and prescribed. Proposals which cannot identify the benefits that will accrue, either in theory or fact, are more in the nature of acts of faith than logic. The identification of the impacts in the real world of alternative approaches, however imperfect, seems to AMPCO a more prudent course of action.
- 3.2.54 AMPCO requested that the Board reject Board Staff's proposal that Hydro's new net income policy be based on a market-based return on equity.

The MEA

3.2.55 The MEA recommended that the return on equity approach to net income policy be rejected for the following reasons:

- Unlike private utilities, where equity holders bear risk, in Ontario, risks are borne by rate payers. This is because all costs, expected or unexpected, are ultimately passed on through rates. To charge rate payers for a market-based return on equity would be to require them to bear the costs of the risk twice. Furthermore, the risks are distributed fairly because they are in proportion to electricity use.
- There has been no empirical evidence that would indicate that there is any economic loss resulting from current electricity pricing schemes.
- Hydro makes its technological decisions based on market costs of capital. Thus arguments that it is overly capital intensive because of a failure to explicitly charge a return on equity are wrong.
- Hydro does not build generation facilities for the purpose of exporting electricity, thus there is no basis for the claims that the exports that do occur are subsidized since Hydro would be incurring the capital costs (and the associated risks) in any event. Export sales prices generally reflect only variable costs, and not the capital costs.
- Hydro raises the capital that it needs exclusively in bond markets. Thus a net income policy that focuses on return on equity, (an index relevant for equity markets), would not be appropriate for bond markets. The ratios relevant for these markets are interest coverage and debt ratio. Furthermore, a return on equity approach based on notional, rather than actual capital structures, would not be understandable to the bond market community.
- Issues surrounding financial soundness are logically distinct from return on equity. Indeed, financial soundness can be achieved more directly by pursuing interest coverage targets and debt ratio targets.
- The value of the provincial guarantee is arguably negligible so long as there is a policy, as stated in the Power Corporation Act, that all

Hydro costs, expected or unexpected, are to be recovered through rates. There is no evidence that the provincial government is being under-compensated, as a secondary risk bearer, by the guarantee fee.

Board Staff

- 3.2.56 Board Staff submitted that the criticisms of its proposed market-based return on equity approach to net income policy were largely unfounded.
- 3.2.57 Partial economic efficiency, as offered by Board Staff's proposal, was better than none and only the return on equity approach achieved this together with greater financial soundness. It was also illogical to include a market-based cost of equity in Hydro's discount rate for economic efficiency reasons, but not to include this in the revenue requirement and rates.
- 3.2.58 Board Staff noted recent developments, such as Hydro's deteriorating financial position, provincial recession, increased budget deficit and the change in government position on nuclear power. It is submitted that these factors, when combined with the enormous demands Hydro will be making on the debt markets to finance system expansion, paint a grave picture for Hydro's financial soundness. Even if borrowing is matched by asset growth, there is a question of the province's ability to sustain such growth in debt. Board Staff argued that these conditions stress the need for more equity creation in Hydro, which the return on equity approach provides and less dependence on debt markets.
- 3.2.59 Dr. Andrews demonstrated that given certain phase-in scenarios, gradual net income increases were possible with the return on equity approach. These increases were for the most part at the level of, or smaller than, net income increases resulting from Hydro's reserve-based approach. Board Staff rejected AMPCO's submission that Dr. Andrews' model created unpredictable rate increases.

3.2.60 Board Staff submitted that the arguments that an optimal capital structure for Hydro cannot be determined were overstated. Estimates obtained through accepted methodologies are deemed to be reasonable surrogates by many jurisdictions.

3.2.61 The province and the people of Ontario are the ultimate bearers of risk with respect to Hydro and should be compensated for this beyond the debt guarantee fee. Board Staff disagreed with Dr. Lind that the ratepayer is the "owner" of Hydro and submitted that it is the province, as determined by the Board in H.R. 16 (Chapter 11, page 45). Board Staff submitted that heavy users of electricity are being subsidized by moderate users of electricity and users of alternative energy sources.

Hydro Reply

3.2.62 Hydro entered an extensive reply argument, which set out reasons in support of its position that the return on equity approach to net income policy proposed by Board Staff should be rejected. The key points of this submission were:

- Hydro's institutional arrangements, including its relationship to the government and the debt guarantee and the fact that Hydro's equity has been contributed by its electricity customers, make it inappropriate for Hydro to target net income using a market-based return on equity.
- Board Staff's position is based on a private sector model and relies, in part, on the notion of "shadow equity" provided by the government. Hydro agreed with the MEA submission that Hydro has no stockholders and the real issue is one of ensuring continued access to debt markets. The ratepayers bear most of the risks and it would be unfair for customers to pay a rate of return to compensate for risks which they continue to bear. The government has not contributed Hydro's equity and is not entitled to a return in the conventional sense. The government is compensated for any risk associated with its debt guarantee by the debt guarantee fee, which is a cost charged to ratepayers.

- Financial self-sufficiency must be considered in the context of Hydro's institutional arrangements. Government directives require that Hydro recover all of its costs through rates and provide enough net income to ensure that Hydro is not a drag on the provincial credit rating. This requires a level of financial performance which ensures that Hydro's debt obligations are met. This form of self-sufficiency flows directly from Hydro's institutional arrangements, including the debt guarantee, and makes traditional private sector concepts of financial self-sufficiency inapplicable. To accept the Board Staff position would be to ignore the public policy choices and benefits associated with the structure of Hydro's institutional arrangement.
- Economic efficiency considerations do not require adoption of a market-based return on equity as part of net income. Distortion of the capital market does not occur if Hydro fails to attribute a market-based cost to the equity portion of its capital, since Hydro's borrowing does not displace private investment because international capital markets are so closely integrated. Also in reality, there is no balance between public and private investment as postulated in the theory of perfectly competitive markets. Finally, the way in which risk is allocated differs substantially between Hydro and private sector corporations, and risk should not be a factor in the opportunity cost of Hydro's equity capital.
- The provincial debt guarantee is an implicit rate covenant, rather than shadow equity on which a return needs to be earned, as suggested by Board Staff. The provincial guarantee rules out the concern that under bad economic conditions, the government might prevent Hydro from raising rates to service the debt, thus causing default. The arrangements relating to the debt guarantee provide both assurance to the financial community and simplify the analysis to be carried out by potential bondholders as to the safety of Hydro's bonds.
- There is no contradiction in Hydro using a discount rate which includes a market-based return on equity for capital investment decisions, but not including this as part of the revenue requirement and rates. Hydro's forecast of electricity demand results from the load forecast which uses price elasticities in combination with prices based on power at cost principles. On the other hand, when capital investment decisions are made about the facilities required to meet the forecast demand, a discount rate incorporating an additional cost of

equity is used. The two applications are different, but this does not either make them incongruous or mean that any significant economic inefficiency results.

- The position that partial efficiency is better than none at all is counter to the accepted view of the "theory of second best" as discussed by Dr. Lind. In some instances a move to partial efficiency may indeed be beneficial, but there is nothing in the evidence to show that adopting a market-based rate of return on equity necessarily produces such a benefit. The correct pricing of the product should be based on marginal costs, not fully distributed embedded costs, and pricing of power is a different problem from that of setting bottom line financial parameters for Hydro.

3.3 LEGAL POSITIONS ON MARKET-BASED RETURN ON EQUITY

Board Commentary

All parties to the proceeding filed extensive legal arguments on the issues arising from the proposal for a market-based return on equity approach to net income policy. The legal issues were also argued extensively in H.R. 16 and the Board concluded at that time that there was nothing in the Power Corporation Act which precluded the use of a market-based return on equity (H.R. 16 Report of the Board, pages 11/10 to 11/30 August, 1986)

The Board does not feel it to be critical to its findings in the current proceeding whether or not the PCA precludes a market-based return on equity being a component of net income and rates. Rather than revisit this issue, the Board adheres to the view that, if an appropriate net income policy for Ontario Hydro requires amendments to the PCA, it will recommend such amendments together with its recommended net income policy for consideration by the government of Ontario.

Accordingly, the Board has merely summarized the "bottom line" position of the parties to the hearing, rather than the extensive reasons and legal precedents on which the parties based their respective positions.

Board Staff

- 3.3.1 Board Staff submitted that the conclusions of the Board in H.R. 16, although not necessarily binding on the current panel, should still stand since no new information had come forward to suggest a need for a change. It argued that Hydro has considerable discretion as to what to include as a cost in setting the rates to be charged for power. A charge for return on equity based on market rates is required for the financial

soundness of Hydro and as such is necessary to the furtherance of the purposes of Hydro and to the carrying on of its business. A charge which is necessary to Hydro should be regarded as a "cost to the Corporation" in accordance with Section 75 of the PCA.

AMPCO

- 3.3.2 AMPCO stated that since H.R. 16 it has not changed its position that Hydro cannot legally include in its rates a market-based return on equity. In order to charge such a return on equity Hydro must point to a specific provision in the PCA which specifically authorizes inclusion of such an amount in rates. In AMPCO's submission no such authority exists and power at cost cannot reasonably be taken to include the profit that an equity holder obtains from investment. If Hydro includes a market-based return on equity in its net income, it would become a profit-making operation which conflicts both with the power at cost principle and the institutional structure of Ontario Hydro.

The MEA

- 3.3.3 In the submission of the MEA, applying the proper rules of statutory interpretation, the PCA does not authorize the inclusion in rates of a return on equity component and indeed is inconsistent with such a proposal. The Board is required to give the words employed in the statute their plain and ordinary meaning, consistent with the objects and scheme of the statute. The ordinary literal meaning of the relevant sections of the PCA, and the obvious intention which can be derived from the scheme of that Act, demonstrate that Hydro is not permitted to include a return on equity component in the rates charged to municipal utilities.
- 3.3.4 The common, ordinary and literal meaning of the word "cost" is consistent only with the notion of an actual outlay or expenditure. Hydro presently incurs no cost for its equity capital which can be considered a chargeable

"cost" in the ordinary meaning of that word as it is employed in that Act, and certainly no cost of that equity to the Corporation. There is no basket clause permitting Ontario Hydro to apportion among the municipal customers any costs other than those set out in Sections 75 (a) to (d) of the PCA.

Hydro

- 3.3.5 Hydro submitted that it is a non-share statutory corporation created by the Legislature of Ontario and with limited powers granted to it in its statute. This is to be contrasted with share corporations such as those created under the Ontario Business Corporation Act.
- 3.3.6 Hydro argued that the PCA provides neither the authority nor the administrative trappings consistent with market-based return on equity being a cost to the Corporation. As a matter of law this silence acts as a prohibition.

REPORT OF THE BOARD

4. **THE BOARD'S FINDINGS AND CONCLUSIONS**

This chapter proceeds first with a review of the objectives for an appropriate net income policy, followed by a discussion of the net income provisions in the Power Corporation Act and an evaluation of Hydro's proposal for a new net income formula. In the final part of the chapter the Board sets out its conclusions and recommendations.

4.1 **OBJECTIVES FOR NET INCOME POLICY**

4.1.1 It appears to the Board that in the early days of Hydro's existence the government intended to create a public power corporation which was primarily debt financed and would charge only its direct costs of operation, maintenance, administration and debt service to its municipal electricity customers. Two other considerations have also become part of Hydro's financial policy — debt retirement (the SDR Amount) and reserves for financial contingencies (the RSC Provision).

4.1.2 Legislators in the past apparently judged it to be prudent for Hydro to pay off its debt over time. The 40 year timeframe specified in Section 75(c) in the PCA was likely intended to reflect the lifetime of Hydro's major generating transmission facilities. The 4 percent interest charge may be related to ensuring that the amounts set aside retain their real value and it may also have been related to inter-generational equity factors.

- 4.1.3 Provision of a reserve against operational risks apparently arose because of a perceived need to self-insure against operating problems. A reserve to alleviate other financial risks apparently arose from a recognition that actual revenues may not meet forecasts in any year and that, due to capital additions preceding customer demand, rates could fluctuate significantly and therefore should be smoothed by use of such reserve funds.
- 4.1.4 These reserve provisions are specific adjuncts to a financial policy of 100 percent debt financing and together are the basis of the net income provisions of the PCA. They have, however, become largely unrelated to the management of reserves for physical risk and financial contingencies. Although Hydro's net income accounting has continued to be done in the framework provided by the PCA, its net income policy has in fact become strongly influenced by financial performance indicators. In addition Hydro has come to view net income contributed by customers as a desirable source of funds, an alternative to debt and allowing more flexible financial management. It can therefore be argued that Hydro has departed from the narrowest conception of the "power-at-cost" approach to pricing electricity. Hydro characterized its present approach as a "cost-plus-something" principle. If accounting terms used in the private sector are applied here, this "plus something" is a return on capital.
- 4.1.5 In the Board's view there is no doubt that Hydro needs to generate a substantial amount of net income. It is prudent for the Corporation to include in its revenue requirement some positive level of income above its direct operating and interest costs as a buffer against unforeseen events. The fundamental question in Phase II of H.R. 19 was: "How much?"
- 4.1.6 In attempting to answer this question the Board has kept in mind the primary objectives for net income which were referred to frequently in the evidence:
- 1) the maintenance of financial soundness;

- 2) the setting of rates that are as equitable as reasonably possible across generations of electricity customers; and
- 3) the achievement of the goal of economic efficiency.

4.1.7 The Board has considered these objectives in light of the evidence presented and has evaluated the various proposals for Hydro's net income policy in relation to those considerations. The Board has also been cognizant of the current requirements of the PCA and whether its conclusions and recommendations indicate a need to amend it.

4.2 MAINTAINING FINANCIAL SOUNDNESS

4.2.1 The Board interprets financial soundness as the capacity of a corporation such as Hydro to meet its financial obligations and to access markets for capital at competitive rates. Assuming the existence of a rational financial plan based on planned activities and forecasts, a corporation will be financially sound if it is able to meet its requirements for funds. Positive net income generated from sales will contribute to financial soundness in the short run, and in the longer run, for a public power corporation like Hydro that does not distribute dividends, to increased amounts of equity or net asset value, thereby allowing the Corporation to borrow at reasonable rates to finance capital expansion of its generating system.

4.2.2 In the Board's view, the evidence presented, as well as recent information from the financial markets, make it very clear that Hydro is at present financially sound to the fullest extent. Its ability to access world capital markets for large amounts of debt at competitive prices is unchallenged. This is demonstrated by its AAA credit rating and the high level of acceptance of its recent \$1.25 billion offering in bond markets around the world.

- 4.2.3 It was repeatedly observed during the hearing that the province's debt guarantee and Hydro's ability to implement rate increases to cover its costs are the most important factors in maintaining the Corporation's financial soundness and excellent credit rating. However, the Board agrees with the views of the expert witnesses that lenders are also concerned with the substance of Hydro's Income Statement and Balance Sheet and its financial performance, albeit as a subsidiary consideration at present. Conditions could easily arise in which a weakening of Hydro's financial performance would detract from its credit rating and increase its interest costs.
- 4.2.4 Evidence and expert testimony confirmed the Board's concerns expressed in its Reports since 1985, including both H.R. 18 and H.R. 19, that Hydro's current net income policy will not ensure acceptable levels of interest coverage and debt ratios over the next few years. Thus, it is the Board's position that in order to maintain Hydro's financial soundness at today's levels, it is important for Hydro to take action *now* to improve its future financial performance.
- 4.2.5 In emphasising the maintenance of financial soundness as the key objective, the Board has placed a high priority on the government's requirement that Hydro avoid posing any threat to the province's credit rating. It is highly unlikely that the government's guarantee of Hydro's debt will ever actually be exercised or that Hydro would require any sort of direct subsidy from the government. On the other hand, because Hydro's debt is large relative to the debt of the government which guarantees it, the possibility that a weakening of the Corporation's financial performance could affect the credit ratings of *both* the province and Hydro has to be taken seriously. In light of the direction given by several Provincial Treasurers on this point, the Board takes as given that Hydro should demonstrate strong financial performance in the 1990s.

- 4.2.6 The problem of evaluating the future financial soundness of a corporation is multi-faceted, depending on forecasts of interest coverage, relative amounts of debt and equity, cash flows and other considerations. Testimony at this hearing tended to emphasize the interest coverage ratio and the debt/equity ratio as key indicators of financial soundness. While this treatment of financial soundness is useful because of the important information it provides to lenders in financial markets, the Board stresses that other indicators — such as the cash-flow ratio and the quality of interest coverage — must also be managed as part of maintaining Hydro's overall financial soundness.
- 4.2.7 The Board finds that maintaining financial soundness is the most important of the three broad objectives set out above for Hydro's net income policy. Inter-generational equity and economic efficiency are important, but are more difficult to achieve, and also less urgent, in the sense that the failure to meet them would not have the immediate dramatic repercussions that can result from a failure to maintain financial soundness. Thus, in the context defined by the Minister's letter of reference for H.R. 19, and the scope of Phase II of the hearing, it is clear to the Board that implementation of a new net income policy that will maintain Hydro's financial soundness should be given the highest priority.
- 4.2.8 The Board observes that the above finding does not minimize the ultimate importance of achieving the other two objectives. These are important background policy questions for Hydro and the government to address. In particular, the issue of economic efficiency received considerable attention in the hearing. The Board has summarized its views on these issues in the hope of assisting in this regard.

4.3 ACHIEVING INTER-GENERATIONAL EQUITY

- 4.3.1 The Board takes as given the long-standing commitment of Hydro and the government to fairness in rate-setting over time. Hydro must treat succeeding generations of customers in similar ways. A related goal in Hydro's net income policy has been the avoidance of sudden large changes in rates. It has become a tradition for Hydro to spread rate increases over a number of years when they would otherwise be very sharp due to large additions to in-service generation capacity.
- 4.3.2 While the Board fully accepts inter-generational equity, including the avoidance of rate shock, as an objective of net income policy, it observes that multiple objectives introduce the possibility of having to make trade-offs. Thus the objective of maintaining fairness over time should not be a barrier to adjustments in net income policy required by important changes in economic and financial conditions. For a variety of reasons the government may choose to change the approach to the target level of contributions by customers to Hydro's net income from time to time as conditions warrant.
- 4.3.3 The Board observes that the implications of alternative net income policies for inter-generational equity were addressed only to a cursory extent in this hearing. When alternative schemes are compared, the implications for different ratepayer groups are obvious in some cases; in others they are not. No detailed empirically-based estimates of inter-generational transfers were provided. While the Board does not see an exploration of this subject as a pressing matter at present, it notes that this gap in evidence prohibited the thorough analysis of inter-generational equity. For this and other reasons, the objective of inter-generational equity has for the moment been assigned a lower priority in the development of a new net income policy than maintaining financial soundness.

4.4 THE GOAL OF ECONOMIC EFFICIENCY

Electricity Pricing and Economic Efficiency

- 4.4.1 The issue of economic efficiency was raised in this hearing because of Board Staff's position that a market-based rate of return on Hydro's accumulated net income, which is shown on Hydro's Balance Sheet as equity, should be included in rates. Board Staff argued that because net income collected through Hydro's rates would generate a rate of return if such income were put to alternative uses in the private sector, Hydro should charge its customers such a market-based rate of return. In the absence of such a rate of return Hydro's prices would, in Board Staff's view, be inefficiently low.
- 4.4.2 Witnesses for Hydro, the MEA and AMPCO disagreed strongly with Board Staff's position that a market-based return on equity should become the basis of Hydro's net income policy. They argued that the establishment of economically efficient electricity prices can only be considered within the broader framework of marginal cost pricing, taking account of all inputs used in the production of electric power. The Board accepts that if economic efficiency is strictly defined in the comprehensive manner of formal economic theory, the issue is beyond the scope of Phase II of H.R. 19.
- 4.4.3 However, the Board believes that a net income policy should be worked out on the basis of conditions which actually apply in the economic context within which Hydro operates, rather than in relation to an idealized situation. On this basis Board Staff's proposal involves principles which are relevant to net income policy, even though the form of economic efficiency referred to by Hydro's witnesses would not require a rate of return on the accumulated equity on Hydro's balance sheet.

- 4.4.4 The Board finds some merit in the proposition that rates should include a charge for the use of Hydro's equity capital when it is considered in a practical context, and measured against realistic "second-best" possibilities for taking account of an efficient pricing goal in the setting of net income policy. It therefore concludes that, with appropriate qualifications, including some rate of return to equity in rates is worthy of further consideration. The Board provides its views on this below.

Net Income Targets and Return on Equity

- 4.4.5 There are two questions involved in considering this issue: whether Hydro should include a charge in rates to cover the opportunity cost to society of its equity capital; and, if it does, how that amount should be determined.
- 4.4.6 Considering the latter question first, the Board agrees with the arguments of Hydro's expert witness that rates of return earned by apparently similar firms, such as investor-owned utilities, cannot be assumed to provide an accurate estimate of the opportunity cost of Hydro's contributed net income. If an imputed rate of return on equity is to become part of Hydro's cost for power, the appropriate rate should be based on a careful study of the actual sources of Hydro's contributed net income and the related opportunity costs and risks.
- 4.4.7 The Board notes in response to concerns expressed at the hearing, that it cannot be assumed in advance that the appropriate rate of return on equity will be higher than the rates of return associated with the net income proposals presented by Hydro, the MEA and AMPCO. The amount of revenue that would be realized with the net income formula proposed by Hydro in H.R. 19 is substantial. Board Staff calculated that the use of Hydro's proposed reserve-based net income target formula for 1990 would have resulted in target net income of \$551 million, equivalent to a rate of return on the 1989 fiscal year average book value of equity of about 9.3 percent. In the view of one of Hydro's witnesses, the weighted average

opportunity cost of funds to all customers of a public utility such as Hydro would likely be lower than the returns typically required by investor-owned utilities because of considerations such as the more limited investment alternatives available to residential consumers. An appropriate rate of return on Hydro's equity might be reasonably close to the rate of return implied by Hydro's proposed reserve-based net income formula.

- 4.4.8 On the question of whether Hydro should charge a return on equity, the Board believes the underlying principle to be valid: Hydro should charge for the capital it obtains, whether it is borrowed money or contributed net income.
- 4.4.9 Board Staff argued that Hydro's net income policy should be influenced by the fact that the prices of goods and services with which electric power competes include the cost of equity capital used by the producing firms. The Board accepts this view and considers it important that the price of electricity should not be artificially low relative to the prices of competing energy forms (such as natural gas) or other competing goods and services (such as solar energy, better thermal insulation of houses, etc.).
- 4.4.10 For this reason in the Board's opinion it is advisable for Hydro to include a charge for the cost of its equity capital in rates, even though it does not actually make a dollar outlay in order to obtain this equity. Otherwise, energy consumers will be encouraged to buy more electricity and less of substitute goods and energy services. Equally, producers of competing goods and services, including load displacement non-utility generators, are discouraged from investing in increments to their productive capacity that could provide energy services at lower cost.
- 4.4.11 In supporting this aspect of Board Staff's position, qualified to recognize the need for estimating an appropriate rate of return, the Board is aware that Hydro now takes account of the cost of all of its capital in making its investment decisions, including an imputed return on its equity equal to 3

percentage points above the cost of debt. The Board believes that Hydro should also ensure that the prices it charges for its services include an appropriate cost of equity capital. It notes that Task Force Hydro in 1971 suggested an appropriate cost "as being at least as high as, say the yield on Ontario Government bonds".

4.4.12 The Board is also aware that a charge for the use of Hydro's equity capital has to be considered in the light of other goals of government policy, which may provide reasons for modifying or setting aside the pursuit of the resource allocation goal implicit in the "level playing field" argument set out above. An example of such other goals is the provision of low cost electricity to support industrial development, a goal supported by AMPCO's witnesses. A further example is the avoidance of changes in income distribution.

4.4.13 The Board recognizes that the application of a charge to equity would be a substantial change in Hydro's approach to setting net income targets, but contends that it is not a fundamental shift in policy. Hydro acknowledged that its proposed net income formula involves an element of the return on equity approach, in that it would annually include in rates 7.5 percent of a portion of equity (the RSRC). Hydro further agreed that extending the notion of a charge on the RSRC to a charge on the whole of its equity was a legitimate approach to consider.

4.4.14 Nevertheless, because charging a return on equity as a component of net income is a departure from Hydro's traditional net income policy, which has been approved by past governments, the Board believes a decision on this issue requires direction from the government.

Income Distribution Considerations of a Charge for Hydro's Equity

4.4.15 The Board acknowledges Hydro's good faith on the matter of net income policy in the past. The Board assumes that Hydro has excluded the

opportunity cost of equity from the revenue requirement because of historical precedent, its reading of the PCA, the policy positions of a succession of governments, and because the Corporation itself does not have to make an outlay of funds to obtain equity capital. Hydro has argued that it would be unfair to make its customers pay an additional amount in rates to cover a return on equity when they themselves have been required to contribute the equity in the first instance and when they bear the risk of rate increases due to system planning errors or other unforeseen problems.

4.4.16 Regarding the question of charging for equity capital that Hydro has not actually had to purchase through financial markets, there is now a clear precedent in the government's decision to charge Hydro a debt guarantee fee. The insurance against default risk provided by the province is an input into Hydro's overall capital formation process analogous to the guarantee of a bank or insurance company. A utility in the private sector would have to pay a commercial fee for such an input. The Board notes that the "level playing field" argument is being applied in this context as well; adjusting the cost of power for the cost of an input provided by the government (and therefore the people of Ontario in their role as taxpayers) provides one rationale for the debt guarantee fee. The fee is treated as an ordinary cost by Hydro and recovered in rates.

4.4.17 Regarding the effects of net income policy on income distribution, the Board notes that any net income policy established by Hydro will have an effect on the distribution of economic welfare among the people of Ontario. Recognizing this fact is helpful in responding to Hydro's argument about fairness. The equity capital contributed through net income by *past customers* as a group, having been invested in Hydro's productive capacity, produces a return. With Hydro's present net income policy, to the extent that net income collected through rates in a given year falls below the true opportunity cost of that equity capital, a portion of the annual real return is received by *current purchasers* of electricity through

paying lower rates than would be charged by an equivalent investor-owned utility. This benefit (which Board Staff referred to as a subsidy) is distributed according to the amount of electricity consumed.

- 4.4.18 Because it is necessary to account for industrial and commercial consumption of electricity and power exports, as well as for electricity consumed by residential customers, it is quite complicated to describe the distribution of the benefits of this 'subsidy'. Nevertheless, it should be possible to estimate the split between industrial and residential consumption, its relation to income levels, etc.
- 4.4.19 Hydro argued that the way in which it prices electricity has been thoroughly sanctioned by provincial governments and that it produces a fair distribution of the benefits.
- 4.4.20 Board Staff has argued that alternatively electricity prices which cover the opportunity cost of equity capital can be combined with the payment of dividends by Hydro to the government, as in the province of Quebec. They argued that under such a regime the benefits of Hydro's invested capital would be distributed to the people of Ontario in a way determined by the incidence of the resultant reduction in tax revenue.
- 4.4.21 The Board observes that it is a simplification to assume that the pattern of incidence associated with Ontario's tax system accurately describes the distributional effects of Hydro's charging for the use of equity capital. If, for instance, Hydro should move towards a lower debt/equity ratio, by accumulating more equity from net income flows, during that period the benefit to taxpayers from paying higher electricity rates would be intangible and difficult to quantify. Alternatively, if Hydro should begin to pay dividends to the province, the government would have a number of fiscal options, such as to decrease its borrowing, increase program expenditure, provide rebates for certain classes of electricity consumers, etc. Each of these options would have different distributional impacts.

Financial Soundness and Return on Equity

4.4.22 The Board believes that whatever may be the government's direction to Hydro on whether to include a charge on equity capital in its rates, the objective of financial soundness embodied in Hydro's net income policy should not be compromised. Hydro should be required to target a level of net income that as a minimum satisfies the achievement of the financial performance ratio(s) upon which assessments of financial soundness are to be based.

4.4.23 In the Board's opinion, if the government directs Hydro to begin to charge a return on its equity, Hydro's net income policy should have dual targets: the financial soundness target defined in terms of selected performance ratios and the return on equity target. The effective net income target in any year should then be the higher of the two.

4.5 THE REQUIREMENTS OF THE PCA

4.5.1 In the Statement of Operations (Income Statement) provided by Hydro, net income is shown as the excess of revenue over all of the Corporation's costs of operation, maintenance, administration, depreciation and interest. The authority to set rates so as to generate net income defined in this way is found in sections 69, 75 and 90 of the PCA.

4.5.2 The SDR clause in the PCA (section 75(c)) is phrased in terms analogous to those used to define a sinking fund in accordance with the provisions of section 16. However, although the sums are set aside as per section 16, Hydro does not actually establish a sinking fund as that concept is normally understood. It does not retire a portion of debt each year according to a 40-year formula, nor does it segregate a corresponding amount of funds to be used explicitly for that purpose.

- 4.5.3 The normal purpose of a sinking fund is to enhance the credibility of the borrower in the eyes of prospective lenders and it is usually associated with a specific bond issue, rather than with the total debt of a corporation. Given the provincial government's debt guarantee, the security provided to potential lenders by a sinking fund would be an unnecessary incentive. Moreover, in a situation in which Hydro's total debt is growing, requiring a globally-defined sinking fund would probably incur unnecessary administrative costs.
- 4.5.4 In a static situation in which Hydro ceased to borrow to finance growth in capital plant, the effect of the SDR requirement would be to reduce Hydro's debt/equity ratio to 0:1 in 40 years. Net income from rate-payers paid during that 40 years, combined with existing equity on Hydro's Balance Sheet, would be enough to make a legacy of the Corporation's remaining plant to succeeding generations. This would clearly be inconsistent with the objective of inter-generational fairness.
- 4.5.5 Hydro's debt/equity ratio has not been falling at the rate implied by the application of the SDR Amount to retire debt in a static situation. The bulk electrical system has been growing and Hydro's total debt has been increasing, and will continue to do so in the foreseeable future. Thus, the SDR Amount appears, at present, to be creating no adverse effect on inter-generational equity. As presently applied, the requirement has the beneficial effect of providing a minimum level of equity that can assist Hydro in meeting contingencies. In the Board's view it also provides a statutory minimum for Hydro's annual target net income. However, as noted in the Board's Interim Report on 1991 rates, in setting its rates Hydro does not actually view the SDR Amount as a statutory minimum level of planned net income and is prepared to transfer amounts from the RSRC to cover the SDR Amount in certain years.
- 4.5.6 The Board views a statutory minimum net income as desirable and necessary. It would prefer, however, that the minimum be defined in a

direct manner, as part of a net income policy that has been agreed upon between Hydro and the government because it is viewed as appropriate in light of current conditions and current precepts of financial management, rather than indirectly through the SDR provisions now contained in the PCA.

- 4.5.7 In the view of the Board, the requirement that Hydro determine an amount each year sufficient to form in 40 years, with interest at 4 percent per year, a sinking fund for the repayment of total outstanding debt is an anachronism which does not respond to the real issues now faced by Hydro in relation to a net income policy. This provision should not be the basis of Hydro's net income policy and should eventually be eliminated from the PCA.

The Reserve for the Stabilization of Rates and Contingencies

- 4.5.8 Relative to the SDR Amount, the RSC Provision is more consistent with the net income policy objectives dealt with in the hearing, because this component of net income is an annual contribution to a reserve to be accumulated in order to respond to unforeseen events and thus is more directly related to the objective of maintaining financial soundness. The Board observes, however, that, in rationalizing its target levels for this reserve, Hydro appears to focus much more strongly on current rate stabilization than on maintaining an adequate reserve for contingencies. Hydro's evidence was deficient on the whole issue of how the actual contingencies it faced should enter into the determination of the appropriate size and nature of the RSRC. Hydro was unable to substantiate that the levels of the reserves were appropriate to meet contingencies, as distinct from the fact that the debt/equity ratio was viewed as appropriate by underwriters of Hydro's debt.

- 4.5.9 The Board accepts that Hydro's very strong borrowing power appears to have been sufficient to respond to variations in cash needs of the sort that

Hydro has so far experienced. The Board is concerned, however, that Hydro may not be sufficiently anticipating financial needs associated with important long-term cost requirements, such as the de-commissioning of nuclear plants. If major cost increases are incurred, the absence of reserves will require greatly increased borrowing, coincident with large borrowing requirements for new generation capacity.

- 4.5.10 In sum, the Board views the RSC Provision in its current form as too narrowly conceived to respond to the objective of maintaining financial soundness. It contains no direct reference to that objective and is mute with respect to achieving appropriate financial performance ratios. There was universal agreement that achieving appropriate levels of these ratios, especially interest coverage, is an important objective. Thus, in the Board's view, the RSC Provision does not respond appropriately to the most important objective of net income policy.

Reserve-Based Net Income Policy Formulation

- 4.5.11 In general, the Board questions the use of reserve-based approaches to net income policy. It recognizes, however, that these approaches flow from the current framework established by the relevant sections of the PCA, as interpreted by Hydro. The equity reserves that have been accumulated are accounting entries. They amount to the difference between the book value of Hydro's assets and its liabilities. In this sense, given that they do not correspond to reserves of cash or liquid assets, they provide little direct financial protection against contingencies as envisioned in section 13 of the PCA. The Board accepts that Hydro's accumulated equity contributes to financial soundness in the sense that financial markets interpret the level of such equity and the corresponding debt/equity ratio as indicators of the credit-worthiness of the Corporation. However, the Board holds the view that it is preferable to have a net income policy that incorporates the maintenance of financial soundness in a more direct way. It agrees with the arguments of AMPCO and the MEA that such an approach is more

understandable to the public, including lenders, and that a policy explicitly based on financial performance ratios is more likely to achieve the level of financial soundness being pursued.

Net Income and Power at Cost

- 4.5.12 There has been much debate over the past five years as to whether the PCA permits Ontario Hydro to charge, as a cost, a return on the Corporation's equity. In the Board's view, a properly determined opportunity cost of Hydro's equity capital is a legitimate "cost" and should be recognized as such.
- 4.5.13 This point can be broadened to recognize that the power at cost principle requires that the "costs" of maintaining financial soundness (such as the maintenance of an appropriate interest coverage ratio) can be legitimately included in rates. Provincial policy states that Hydro must ensure that it operates with an appropriate degree of financial self-sufficiency so that there will be no reasonable potential for an adverse impact on the province's credit position. The Board finds therefore that such costs are a requirement of the carrying on of Hydro's business and should be included in rates.
- 4.5.14 The Board believes that the cost of financial soundness, including the provincial debt guarantee fee and the maintenance of appropriate financial performance, although not encompassed by the specific wording in the current PCA provisions relevant to net income, are in line with the objectives and scheme of the PCA. If Hydro's new net income policy is to be based directly on considerations of financial soundness, rather than the current reserve-based approach, it would be prudent to make this explicit by amending the PCA as soon as feasible.

4.6 HYDRO'S CURRENT AND PROPOSED NET INCOME POLICY AND FORMULATION

4.6.1 While Hydro's present net income policy is consistent with the requirements of the PCA, it goes beyond the minimum requirement in the PCA. Hydro asserts that it is concerned with at least some aspects of the objectives set out at the beginning of this chapter: financial soundness and inter-generational equity. Its formal statement of its current net income policy sets out as a governing principle that, in establishing a net income target, it shall consider the level of rate increase, financial soundness and capital availability. The associated procedures require that financial soundness be measured by various financial indicators, which are to be maintained at levels that do not prejudice the credit rating of the province.

4.6.2 An additional procedure within the current policy requires that net income targets shall be based on a coverage of 1.05 on interest charged to operations and 1.50 on interest capitalized, with a cash flow coverage ratio above 1.0. While this rule was viewed as effective in generating acceptable levels of net income when it was adopted, it is not defined in terms of the underlying objectives of net income policy and thus does not automatically adjust the flow of net income to levels consistent with changing conditions. Hydro observed that its financial forecasts indicate that the formula will provide insufficient net income over the next few years, likely not even enough to meet the minimum SDR Amount. The inadequacy of the prescription is one reason for developing a new policy and the 1.05/1.50 formula does not appear in Hydro's preferred prescription for a new net income policy.

4.6.3 Hydro's proposed net income policy involves covering the SDR Amount and ensuring that the real value of RSRC increases in line with the rate of growth in the demand for service from the bulk electricity system. The proposed policy is strongly influenced by Hydro's preference for an approach that is consistent with the PCA. It would result in the

maintenance of adequate reserves, if one assumes that these reserves are adequate to begin with, and if future net income targets are met. However, in the Board's view the policy does not sufficiently and directly address the net income policy objectives identified above.

- 4.6.4 In particular, the Board is concerned that the proposed policy does not address directly enough the most important objective, maintaining financial soundness. Hydro's simulations, based on its 20-year forecasts and plans, suggest that its new policy will satisfy the financial soundness objective, as measured by the interest coverage ratio and the debt/equity ratio, relative to the criteria recommended by its financial consultants. The Board observes that projections in 1983, based on Hydro's current policy, indicated a similar result, but were not borne out in practice. In H.R. 19 Hydro could not identify what levels of reserves it felt to be appropriate as protection against contingencies, though, as indicated in the preceding paragraph, it believes the reserves are globally adequate.
- 4.6.5 The Board finds that while Hydro's proposal is an improvement over the existing net income policy, it does not respond effectively or directly enough to meeting the fundamental objectives for net income policy. If appropriately implemented, it may lead to maintaining financial soundness, but this primary objective is not contained in the definition of the proposed policy. Rather it is a by-product of the reserve-based policy that the Board and other parties to the hearing believe should be eliminated. A similar criticism can be made about the implications of the policy for inter-generational equity. The policy seeks to preserve fairness by continuing to include an amount of net income in rates that has been defined by an objective (the SDR Amount) that itself has the potential to be inequitable across generations of customers.

4.7 THE BOARD'S CONCLUSIONS

Formulating a New Net Income Policy for Hydro

- 4.7.1 The Board concludes that Ontario Hydro is at present financially sound. This is confirmed by its ready access to financial markets at competitive interest rates. Hydro's current financial performance poses no threat to its credit rating, nor to the credit rating of the provincial government.
- 4.7.2 The Board reiterates that Hydro's financial soundness rests most importantly on two foundation stones: its ability to adjust rates to cover its costs; and the province's guarantee of Hydro's debt, which provides maximum security for the Corporation's bonds. At the same time, the Board has consistently heard expert witnesses express their views that the standard financial performance indicators, viewed as important by financial analysts and lenders in relation to investor-owned firms, provide an increasingly important measure of the Corporation's financial soundness.
- 4.7.3 The Board observes that there has recently been a weakening of some of these indicators (such as the interest coverage ratio). Furthermore, based on the current net income policy as applied in recent years, Hydro's own projections for the 1990s are that these important indicators will be below the levels deemed appropriate by its own consultants. Given Hydro's position, and the evidence provided by expert witnesses, it is clear to the Board that the Corporation's financial performance must be improved in order to ensure that Hydro remains financially sound. This will require the attainment of higher targeted levels of net income.
- 4.7.4 Maintaining financial soundness is vital to ensure that Hydro has adequate financial resources to deal with unforeseen events and access to capital markets at reasonable rates, so that Hydro would, not under any foreseeable circumstances, threaten the province's credit rating. This objective has been articulated by Provincial Treasurers over the past

decade and a half. The Board assumes that the current government also subscribes to the same objective.

- 4.7.5 The Board favours achieving the financial soundness objective by a net income policy formulated directly in terms of financial performance ratios. Evidence presented at the hearing made it clear to the Board that analysts who evaluate the financial strength of borrowers pay most attention to the interest coverage ratio and the Board also accepts this ratio as a useful summary of the leeway that a corporation has in meeting its financial obligations. Thus the Board believes that Hydro's net income policy should be based on an interest coverage ratio, though it also accepts that it may be desirable to target additional financial performance ratios, such as the debt/equity ratio and cash flow coverage.
- 4.7.6 Based on evidence presented in this hearing the Board believes that the minimum required level of net income for rate setting purposes should be consistent with annual gross interest coverage of 1.20 and the desirable range should currently be 1.20 to 1.30. This will also lead to an improving debt/equity ratio over the longer term. The Board observes, however, that this level of interest coverage was based on a long-term forecast for Hydro that assumed the implementation of the preferred plan from Demand/Supply Plan. This financial forecast may now be of little relevance and in need of updating. When this has been done, financial experts should review Hydro's revised forecast and recommend a minimum target level and an acceptable range for interest coverage.
- 4.7.7 The Board also views the objectives of inter-generational equity and economic efficiency as important albeit subordinate components of an appropriate net income policy.
- 4.7.8 The factual basis offered in H.R. 19 for understanding the implications of inter-generational equity in relation to any particular net income policy is weak. To the extent that it is possible to identify inter-generational

transfers in general terms, a new net income policy for Hydro should not arbitrarily violate this objective. At the same time, this objective should not act as a permanent barrier to a change in the treatment of present and future generations of customers relative to past generations, if there are compelling reasons for such a change.

4.7.9 The Board believes that Hydro's net income policy should be consistent with economic efficiency. It proposes examination of charging a return on Hydro's equity as a step in this direction that recognizes the "second-best" alternatives which are available. However, the final extent to which this is pursued and the choice among the trade-offs involved are matters of government policy.

4.7.10 Based on the evidence in the hearing, the Board concludes that the appropriate rate of return cannot be obtained by a market-based calculation analogous to that applicable to investor-owned utilities. The considerations in respect of ratepayers who provide Hydro's net income on the one hand, and equity investors in private corporations on the other, are sufficiently distinct that simple applications of rates of return observed in private equity markets have little direct relevance to Hydro's situation.

The Power Corporation Act

4.7.11 The Board believes that the power-at-cost principle should continue to be the basis of Hydro's revenue requirement, net income policy and rates. It should be clearly recognized that the cost of maintaining financial soundness is legitimately a cost to be included in Hydro's total cost of power. This is consistent with past interpretations of the PCA and with the policies of past governments, including charging the debt guarantee fee as a cost of power. The move to a net income policy based on financial performance objectives can be accommodated under the PCA as currently written.

- 4.7.12 However, the Board believes that the parts of the PCA that relate to net income policy should be reworded as soon as feasible. This should be done in terms of the underlying principles to be pursued, rather than in terms of a specific formula for net income.
- 4.7.13 The Board suggests that when considering future amendments to the net income provision of the PCA, the government and Hydro take account of the following principles:
- the recovery in rates of all direct costs of producing power;
 - maintaining financial resources to meet all reasonable contingencies and to stabilize rates; and
 - maintaining financial performance that provides access to capital markets at favourable rates and protects the credit rating of the Corporation and the province.
- 4.7.14 The Board does not see the need for the SDR Amount and the RSC Provision of the PCA and believes that a new net income policy should be formulated in direct terms that reflect Hydro's financial performance needs. Hydro's evidence shows that maintaining financial soundness by achieving appropriate levels of various financial ratios will generate sufficient net income to cover the requirements currently defined by the SDR Amount and the RSC Provision.
- 4.7.15 The objective in amending the PCA is to provide clear language on the underlying principles and authority for a new net income policy. The prescription of particular net income targets, based on quantitative measures of financial performance, should not be contained in the PCA but should be decided through consultation between the government and Hydro and incorporated either in a regulation under the PCA or in the Memorandum of Understanding.

Implementation of a New Net Income Policy

- 4.7.16 Final agreement on the formula upon which Hydro's new net income policy will be based, and implementation of the new policy in rate setting, will require discussion between the government and Hydro. The Board is sufficiently concerned about the short-term financial outlook for Hydro, even given the dramatically increased projected rate increases at 3 to 4 percent above the rate of inflation in the period 1991 to 1993, to recommend that higher target levels of net income be achieved as soon as possible. The Board recommends that Hydro's proposed formula for planned net income not be used to target net income levels for the 1992 rate year. Rather, as an interim step, the target range for interest coverage of 1.20 to 1.30 recommended by J.P. Morgan should be used for the purpose of calculating 1992 net income requirements. This level of net income will provide coverage of the SDR Amount and is therefore consistent with the PCA.
- 4.7.17 Hydro should prepare a new net income policy statement based directly on interest coverage and other financial performance measures and file this for review in H.R. 20.

4.8

RECOMMENDATIONS

1. The Board recommends that power at cost be retained as the defining principle upon which Hydro sets prices for the services it provides to the people of Ontario.
2. The Board recommends that the specific costs of maintaining financial soundness be recognized and included as a component of the total cost of Hydro's services.
3. The Board recommends that Hydro formulate and implement a new net income policy defined directly in terms of the objective of maintaining financial soundness, rather than in terms of specific financial reserves as currently defined.
4. The Board recommends that Hydro and the government agree upon and finalize a statement of principles and operating procedures to be used by Hydro in applying the new net income policy, and that this statement be embodied in either a regulation under the Power Corporation Act or the Memorandum of Understanding between the Corporation and the government.
5. The Board recommends against adoption of the net income formula Hydro proposed in H.R. 19, because it is not formulated in terms of the concepts most directly relevant to maintaining the Corporation's financial soundness. Until the government and Hydro agree on the final net income policy and prescription, the Board recommends that the net income formulation recommended by J.P. Morgan Securities Inc. of 1.20 to 1.30 interest coverage be used as an interim basis for setting 1992 rates. Hydro should file a draft policy statement based on the interest coverage approach

recommended by J.P. Morgan Securities Inc. for review in H.R. 20.

6. The Board recommends that as soon as feasible the PCA should be amended to incorporate clear language expressing the principles of Hydro's net income policy and revoking the current Statutory Debt Retirement and Reserve for Stabilization of Rates and Contingencies provisions of section 75 of the Power Corporation Act.
7. The Board recommends against the use of a market-based return on equity of the sort calculated for investor-owned utilities as a basis for Hydro's net income policy. However it recommends that the government provide direction to Hydro in regard to including in net income an appropriate charge on Hydro's equity capital to ensure that energy efficiency measures, substitute fuels and load displacement non-utility generation can compete on a "level playing field" with Hydro's power at cost.

5. **COSTS AND COMPLETION OF THE PROCEEDINGS**

Under Section 28 of the Ontario Energy Board Act, the Board is empowered to award costs to intervenors. The Board's Report in E.B.O. 116, established certain criteria and guidelines for such cost awards.

5.1 **INTERIM REPORT AND COST AWARDS**

- 5.1.1 The Board issued its Interim Report on Hydro's 1991 Rates on August 28, 1990. In that Report the Board made cost awards to intervenors requesting costs, based on the proceedings in Phase I of H.R. 19.

5.2 **PHASE II COSTS**

- 5.2.1 AMPCO requested that the Board order Hydro to pay its reasonably incurred costs arising out of H.R. 19 - Phase II.
- 5.2.2 In determining the proportion of costs that should be paid by Hydro AMPCO requested the Board to consider that:
- it submitted interrogatories which were pointed and relevant;
 - it submitted evidence and called a witness panel which provided valuable insight into the opinions of Hydro's customers about the

proposed changes to Hydro's net income policy. This was the only such evidence presented to the Board; and

- it was represented before the Board on every day of the Phase II hearing and undertook cross-examination of all witness panels.

5.2.3 The MEA requested that it be awarded the full costs of its participation in the proceedings. The MEA reiterated its submissions regarding costs made in its final argument in Phase I of the hearing.

5.2.4 The MEA noted, in addition, that over the years it has been a significant contributor to the debate concerning Hydro's financial soundness and net income policy. It submitted that it has consistently provided the Board with cogent arguments on these issues, and that the Board has adopted important recommendations made by it.

5.2.5 In the event that the Board determines to award the MEA only a portion of its reasonably incurred costs, the MEA requested that it nonetheless be awarded 100% of its costs with respect to the work National Economic Research Associates, which provided expert evidence to the Board, as well as for Ecometric Consulting, which provided much of the background work supporting the expert testimony filed by the MEA.

5.2.6 No other parties requested an award of costs.

5.3 BOARD FINDINGS

5.3.1 The Board finds that despite the divergent positions of the parties to the hearing on the issues in Phase II of H.R. 19, all parties intervened responsibly and attempted to provide expert opinion to assist in the Board's review of Hydro's net income policy proposal.

- 5.3.2 Much of the time of the hearing and of the intervenors was spent addressing Board Staff's proposal for a net income policy based on charging a market-based return on equity. Given the background related to this proposal this is understandable, but in the Board's view other alternatives and related policy issues were accordingly not dealt with as completely as the Board would have wished.
- 5.3.3 AMPCO showed a good grasp of the issues and the perspectives provided by its panel of witnesses were useful to the Board, albeit the focus of the reply evidence was on Board Staff's proposal rather than Hydro's.
- 5.3.4 AMPCO's interrogatories and cross-examination were more focused compared to the Phase I proceeding and the argument submitted was informative.
- 5.3.5 The Board accordingly awards AMPCO 100 percent of the eligible reasonably incurred cost of its witness and consultants, and 75 percent of its other reasonably incurred costs, after these have been assessed by the Board's Assessment Officer.
- 5.3.6 The MEA demonstrated its usual good understanding of the issues and the review of the J.P. Morgan report undertaken by NERA was of assistance to the Board. The cross-examination and argument provided very useful input to the record of the proceedings.
- 5.3.7 The Board accordingly awards the MEA 100 percent of the reasonably incurred costs of its expert witness and consultants, and 80 percent of its other reasonably incurred costs, after these have been assessed by the Board's Assessment Officer.
- 5.3.8 Hydro is ordered to pay the costs of AMPCO and the MEA, in accordance with the Board's Findings herein and upon receipt of the Board's Cost Order.

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5.3.9 Hydro is also ordered to pay the Board's Costs of Phase II of H.R. 19 upon receipt of the Board's Cost Order and invoice.

5.4 **COMPLETION OF THE PROCEEDINGS**

5.4.1 The Board herewith respectfully submits its Report and Recommendations on a Review of Ontario Hydro's Net Income Policy to the Minister of Energy, in accordance with the terms of the Minister's Reference of March 27, 1990.

APPENDICES

- A. Ontario Hydro Net Income Policy Statements
- B. Glossary of Terms

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APPENDIX A1 - HYDRO'S CURRENT NET INCOME POLICY

Level 1 Net Income Policy

SCOPE

This policy applies to all employees who have responsibility for the determination of the net income target levels for rate-setting and financial planning purposes.

DEFINITIONS

Net Income Requirement: The net income levels for the budget year and the rate year, included in the Corporate Budget and the Financial Forecast, respectively.

Net Income Targets: Net income levels that are based on a general consideration of financial soundness and a fair cost recovery pattern but without the benefit of the specific considerations of the near-term rate levels and capital availability.

Financial Soundness: The ability to meet financial obligations and to withstand situations that have potential adverse financial consequences.

GOVERNING PRINCIPLE

Ontario Hydro shall consider the level of rate increase, financial soundness, and capital availability when establishing its net income requirement.

DECISION RULES

1. The level of net income included in the revenue requirement affects the rate increase, financial soundness and the level of borrowings. In establishing the net income requirement, trade-offs between these factors may be required. Considerations related to financial soundness are outlined below.
2. Ontario Hydro's financial soundness shall be maintained at a level that does not prejudice the Provincial credit rating.

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3. Primary indicators of financial soundness shall be the debt ratio and the ability to meet interest payments. The latter will be measured by the interest coverage, quality of interest coverage and cash flow coverage.
4. The net income targets shall be based on a coverage of 1.05 on interest charged to operations combined with a coverage of 1.50 on interest capitalized, and a cash flow coverage ratio above 1.0.
5. The debt ratio shall not deteriorate significantly but otherwise shall be dependent on the interest coverage associated with the net income targets.

RATIONALE

- Net income targets are important to the Corporation's customers and bondholders, as well as the Provincial Government.
- Appropriate levels of net income allow the Corporation to: more fairly allocate costs between current and future customers; assure bondholders that debt obligations will be met; finance facilities that provide a reliable electricity supply; and provide reasonable assurance of being able to operate without direct financial support from the Province.
- The Corporation's debt is guaranteed by the Province. Nevertheless, the financial community monitors the Corporation's financial soundness. Key indicators of financial soundness are measures of: asset protection as measured by the debt ratio; fixed charge coverage as measured by the interest coverage and cash flow coverage ratios and capital needs.
- When net income is the only source of equity, as it is for Ontario Hydro, the debt ratio and interest coverage are interdependent. Hence, a level for one cannot be fixed without determining the other. The credit rating agencies and investment dealers have indicated interest coverage is the more important financial soundness indicator. This suggests that providing a satisfactory level of interest coverage is maintained, the resulting debt ratio should also be satisfactory.
- The net income targets maintain financial soundness, particularly during periods of high construction activity and smooth large cost changes when new facilities are placed in-service.
- The net income targets comply with the direction received from the Government and are consistent with the advice provided by the financial community.

APPENDIX A2 - TERMS OF REFERENCE - REVIEW OF HYDRO'S NET INCOME POLICY

BACKGROUND

Hydro's current net income policy and target levels were developed in 1983 following an extensive review. This included a review of practices of other utilities, input from the financial community and the views of the Provincial Government. This Policy requires net income to be planned taking into consideration financial soundness, the level and pattern of rate increases and capital availability. Target levels, based on financial soundness considerations, are equal to 5 percent of interest charged to operations plus 50 percent of interest capitalized. This approach to planning net income was designed to provide for future levels of financial performance similar to those achieved in the 1970s while smoothing the rate impact of new capital being placed into service.

Since 1983 the outlook for Ontario Hydro has changed significantly, in particular for the decade of the 1990s target net income levels are not expected to provide sufficient net income to meet the statutory debt retirement provision in all years. This situation prompted the need for a review of target net income levels.

The OEB was informed of our intention to conduct such a study, and in its H.R. 18 Report recommended that

"...Hydro's net income policy for the 1990s be reviewed with the assistance of external expertise and a report filed in H.R. 19 in order to: establish multi-year objectives; provide for debt retirement; maintain an adequate level of retained earnings and annual net cash flows; and ensure the financial integrity of, and minimize the cost of capital to the Corporation."

Hydro has accepted the OEB recommendation.

OBJECTIVE OF THE REVIEW

The objective of the review is to recommend a revised net income policy including the definition of target levels for use in planning during the 1990s.

SCOPE OF THE REVIEW

The alternatives developed as part of the review will conform to the Power Corporation Act. The review will not consider any alternative approaches previously studied and rejected essentially because of non-conformance with the PCA, including: net income

approaches involving market-based return on equity capital; net income resulting from the use of electricity prices as an instrument of demand management; net income approaches based solely on objectives of debt minimization to the exclusion of other financial performance objectives; and, approaches which target net income levels at less than statutory requirements.

The review will include input from all stakeholders in Ontario's net income policy including customer groups, the Ministries of Energy and Treasury and Economics, the international investment community and Hydro

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Management. It will also consider the practices of other large utilities, especially those that are government owned or controlled, and relevant material from academic and industry literature.

The development of the revised policy will consider Hydro's capital structure, levels of annual financial performance, measures of financial performance and the role of rate smoothing. It will also consider projections of future financial results including borrowing requirements and capital availability as well as uncertainty in these projections.

PLANNED RESULTS

A revised policy statement and a report supporting any policy revisions which summaries all considerations of the review.

RESOURCES

The review will be conducted by the Corporate Financial Planning and Reporting Division with support from Treasury, Economics, and Forecasts, Law and Energy Management and with the assistance of external expertise from the international financial community.

CONSTRAINTS

1. The review is to be complete by early May, 1990 in time for use at the OEB hearing on 1991 rates.

SCHEDULE

- | | |
|---|--------------|
| 1. Approval of Terms of Reference by Board of Directors | Jan 15, 1990 |
| 2. Draft Policy developed | Feb 28, 1990 |
| 3. Policy Finalized and Report written | Apr 15, 1990 |
| 4. Policy approved by the Board of Directors | May 14, 1990 |

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APPENDIX A3 - HYDRO'S PROPOSED NET INCOME POLICY

Revised Statement of Corporate Financial Policy on Net Income

SCOPE

This policy applies to all employees who have responsibility for the determination of the net income target levels for rate-setting and financial planning purposes.

Definitions

1. **Net Income Requirement:** the net income levels for the budget year and the rate year, included in the Corporate Financial Plan and the Financial Forecast, respectively.
2. **Net Income Targets:** net income levels that are based on a general consideration of financial soundness and a fair cost recovery pattern before taking into account rate smoothing and capital availability.
3. **Financial Soundness:** the ability to meet financial obligations and to withstand situations that have potential adverse financial consequences.

GOVERNING PRINCIPLE

Ontario Hydro shall establish net income to comply with the statutory requirement for debt retirement, to stabilize the pattern of rate increases, and to ensure the lowest long-term rates to customers while maintaining the financial soundness of the Corporation.

DECISION RULES

1. Ontario Hydro's financial soundness shall be maintained at a level that does not prejudice the Provincial credit rating and which maintains the ability of the Corporation to attract capital at competitive rates.
2. Primary indicators of financial soundness shall be the ability to meet interest payments and the debt ratio.
3. Net income targets shall be based on the provision for statutory debt retirement plus interest on the Reserve for the Stabilization of Rates and Contingencies. The rate of interest shall be equal to the long term forecast rate of inflation plus the long term forecast rate of growth in system load.
4. The annual net income requirement shall be established taking into account rate smoothing and capital availability considerations and thus may differ from the target level. Under normal circumstances net income requirements will be established at or above the provision for statutory debt retirement.
5. The debt ratio shall not deteriorate significantly but otherwise shall be dependent on the established net income requirements. The cash flow coverage ratio shall be maintained at a level above 1.0.

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APPENDIX B - GLOSSARY OF TERMS, H.R. 19-II

Avoided Costs - A project specific cost which Hydro can avoid when private electricity generation or energy management displaces Hydro's own generation and is determined by applying the System Incremental Costs to the power (MW) and energy (MWh) expected to be delivered by the project over the term of the proposed contract and is influenced by such factors as timing, relative power and energy delivery profiles and dispatchability.

Buy-Back Rate - The rate which Ontario Hydro pays to purchase power from independent producers.

Capital Program Costs - The costs of the construction and commissioning of capital facilities, including the interest associated with financing during construction, major modifications to these facilities, the production of heavy water, training costs, and the purchase of minor fixed assets.

Cash Flow Coverage Ratio (CFCR) -

A financial ratio that measures the extent to which funds from operations cover interest payments. It is also a measure of fixed charge coverage. It is defined as the ratio of internally generated cash flow plus interest costs charged to current operations to gross interest costs.

Debt Ratio - The ratio of debt to total capital. It is a measure of financial soundness and focuses on (debt and equity) the long-run financial and operating structure of the corporation.

Decommissioning Costs - The costs of transforming an in-service facility into a safe and socially acceptable, permanently out-of-service state.

Depreciation - The gradual exhaustion of the service capacity of fixed assets which is not restored by maintenance practices. It is the consequence of such

factors as use, obsolescence, inadequacy and decay.

Embedded Cost of Debt - The weighted average cost of outstanding long-term debt.

Equity - Represents the amount invested in the electricity system, which has been contributed by customers in the form of net income or invested by the Province of Ontario.

equity:

= equity accumulated through debt retirement appropriations

+ reserve for stabilization of rates and contingencies

+ contributions from the Province of Ontario as assistance for rural construction

Financial Soundness - The ability to meet financial obligations and to withstand situations that have potential adverse financial consequences.

Generally Accepted Accounting Principles (GAAP) - Those accounting principles which have been established in a particular jurisdiction by formal recognition by a standard setting body, or by authoritative support or precedent.

Gross Interest - The interest and amortization of bond discount on bonds payable

+ interest on notes payable

+ interest on bank loans

+ interest on other long-term debt

+ interest on accrued provisions

+ foreign exchange on bond interest payments

- amortization of gain/(loss) on premature retirements

Interest Capitalized - The portion of gross interest associated with the financing of assets under construction (including heavy water production) and unamortized advances for fuel supplies.

Interest Coverage Ratio - The ratio which measures the extent to which net income covers gross interest payments. Hydro uses two interest coverage ratios. The first, referred to as the **level of interest coverage ratio** or simply the **interest coverage ratio**, is defined as the ratio of net income plus gross interest, to gross interest. The second, the **quality of interest coverage ratio**, is defined as the ratio of interest costs charged to current operations to gross interest. These ratios indicate the extent to which fixed charges are covered by operating income.

Kilowatt (kW) - A measure of power, equal to one thousand watts. A kilowatt is approximately equal to one and one-third horsepower.

Kilowatt Hour (kWh) - The commercial unit of electric energy equal to 1000 Wh. The amount of electricity

consumed by ten 100 W light bulbs burning for one hour.

Net Income - The residual amount remaining after deduction of all expenses from revenues. Hydro's net income comprises the SDR Amount and the RSC Provision.

Net Interest - Referred to as "interest" in the Statement of Operations, represents the interest costs attributable to the debt used to finance the assets in-service.

net interest =

- gross interest
- interest charged to construction in progress
- interest charged to heavy water production
- interest charged to unamortized advances for fuel supplies
- interest charged to fuel for electric generation
- interest earned on investments

Non-Utility Generation (NUG) - Electrical generation in Ontario owned and operated by electricity producers other than Ontario Hydro; includes private and municipal utilities, and private power producers. Also called "parallel generation".

Nuclear Generating Station (NGS) - A station producing nuclear power.

Power Corporation Act (PCA) - The enabling legislation for Ontario Hydro and referred to as the Power Corporation Act, R.S.O., 1980, Chapter 384, as amended.

Power District - An additional cost municipality comprising the direct industrial group of customers and the rural retail customers created by Hydro for costing purposes.

Power Purchases - Firm and interruptible purchases of power from other utilities or the NUG industry.

Power System - All the interconnected facilities of an electrical utility. A power system includes the generating stations, transformers, transmission lines, substations, distribution lines, and circuits to the customers' premises. A system consists of all the facilities required to provide service to the customers.

Rate of Return on Equity - The net income of the utility expressed as a percentage of the amount of equity invested.

Revenue Requirement for Primary Sales - The revenue that must be collected from customers to meet Hydro's costs including net income, less secondary sales revenues. Other costs include operation, maintenance and administration (OM&A), fuel and

fuel-related, depreciation, and interest
and foreign exchange.
revenue requirement
= costs as per statement of operations
+ net income requirement
- revenues from secondary sales

Rate Stabilization and Contingency (RSC) Provision - A discretionary account, allowed in the PCA, sections 15 and 75, whereby Ontario Hydro may include in the cost of power an annual amount for the purpose of adjusting and apportioning its rates and for contingency expenditures.

Reserve for Rate Stabilization and Contingencies (RSRC) - The net accumulated value of the RSC provisions less any amounts used for authorized purposes. Shown on the statement of financial position as a component of equity.

Statutory Debt Retirement (SDR) Amount - A provision in the PCA, section 75, for the cost of power to include an annual amount for the repayment of basic debt.

Statutory Debt Retirement (SDR) Fund - The accumulated value of the annual SDR amounts shown on the statement of financial position as a component of equity.

Target Net Income - As currently, practiced by Hydro, a level of net

income in any year sufficient to achieve a coverage of 1.05 on interest charged to operations combined with a coverage of 1.50 on interest capitalized, and a cash flow coverage ratio above 1.0.

Time-of-Use (TOU) Rates - The application of lower rates during night time, weekends, holidays and summer; the application of higher rates during day-time, work days and winter.